FEEDSTUFFS

★ A WEEKLY NEWSPAPER ★

FOR THE FEED MANUFACTURER, JOBBER, BROKER and DEALER

Volume 28—Number 20 | MAY 19, 1956 | 1 Year $4, 2 Years $7

Chick, Poult Output Show Further Rise

WASHINGTON—A continuation of previously indicated trends in the size of the market for poultry feeds is apparent in the U.S. Department of Agriculture's latest report on hatchery production of chicks and turkey poults.

Output of broiler chicks in April was again up substantially from a year earlier. The hatch of chicks for laying flock replacements, while about the same as a year earlier, was again lagging in relation to trends earlier this year. And production of heavy breed poults remained sharply ahead of the corresponding 1955 pace, while output of light breed poults again was below 1955 levels.

Everybody's Doing It

One observer, in looking at the broiler chick and poult data, commented: "Everybody—almost everybody—must be eating broilers, and probably everybody is expected to eat turkeys."

The bullish attitude on broilers is evident also on the turkey side of the ledger, although the pace has slowed somewhat. Production of turkey meat can be nothing less than higher than a year ago, even though light breed turkey production is declining.

Another exhaust valve for the expanded heavy breed production is found in the fact that more heavy varieties are now sold at light weights, displacing to some extent light breed varieties in the market place.

Total hatchery production of chicks during April was 297,808,000—up 9% from April last year. For January-April, total chick production was

(Continued on page 127)

"Good grief! I must have left Edna down at the railroad station."

AFMA Cwt. Campaign To Get Push at Chicago

CHICAGO—Efforts to change the method of grain trading from the bushel to the hundredweight basis gained further momentum this week with the announcement that the issue will receive considerable attention here during the May 23-25 convention of the American Feed Manufacturers Assn.

Farm and industry leaders will meet with the AFMA Committee of Purchasing Agents May 23 to coordinate activities related to the hundredweight campaign. (A report from the committee on progress of the program to bring about the change will be found on page 126.)

"The hundredweight discussion will be part of an open meeting scheduled for 2 p.m. in the Venetian Room of the Morrison Hotel," Erle Ellis, Hales & Hunter Co., Chicago, chairman of the AFMA committee, announced.

"Representatives from nearly 50 farm and feed associations have been invited to participate in the discussion. Along with officials from state and regional feed groups, the American Farm Bureau Federation, the National Grange, the Chicago Board of Trade, and others will be called upon for reports," Mr. Ellis stated.

"Since the campaign was activated by the AFMA at the 1955 convention, considerable interest has been shown in effecting a change from bushel to hundredweight measure by scores of groups. The May 23 meeting will provide opportunity for taking an inventory of this progress," Mr. Ellis added.

"Preceding the hundredweight discussion, the purchasing agents group

(Continued on page 131)

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AFMA Program Focuses Attention On Feed Selling

CHICAGO—With nutrition knowledge having outrun feed marketing and distribution in recent years, the 1956 convention of the American Feed Manufacturers Assn. is tuned to the problems of the times.

The convention, which will be held May 23-25 at the Morrison Hotel in Chicago, will focus particular attention on selling the market.

More than 1,700 persons are expected to attend the meeting this year, and attendance probably will top the previous high, according to AFMA officials.

The feed sales aspect of the program will be found in several of the talks. Authorities from the feed and

(Continued on page 131)

USDA Studies Feed Use of Antibiotics, Other Additives

WASHINGTON—The feed industry this week was provided with new information on the extent and levels of use of antibiotics, other drugs and vitamin B_{12} at low levels in formula feeds.

The information came in a U.S. Department of Agriculture report on a study of the use of these materials in feeds for growth promotion in poultry and livestock. The report is by Dr. V. John Brensike, agricultural economist in the Agricultural Marketing Service who also is well known for his feed mill cost and other studies.

The report will be of interest to feed men in that it provides information showing how the industry in general and plants of different size and in different areas use certain feed additives in the different types of feed.

The complete details will be published in a subsequent issue of Feedstuffs. Meanwhile, here are just some of the findings:

More than 50% of the total formula feeds produced for poultry, hogs, dairy animals and beef cattle during the year July 1, 1954-June 30, 1955, contained low levels of antibiotics for growth promotion and stimulation.

This and other estimates are based on a survey covering about 10% of the plants in the industry as defined by the Bureau of Census. The feed tonnage produced by plants in the survey represents about 34% of the industry's total production.

The averages—such as that above

(Continued on page 127)

Expansion of U.S. Livestock Output Is Letting Up

WASHINGTON—A significant letup from past expansion of livestock production is noted by the U.S. Department of Agriculture.

However, USDA points out in its latest Livestock and Meat Situation report, this does not represent a major reversal of trend. Hog production will remain less than in the past year, but over-all cattle production will continue large, as cow numbers are being fully maintained.

Market supplies of both hogs and

(Continued on page 131)

FEEDSTUFFS *Features This Week*

ANTIOXIDANTS: An article by Dr. J. R. Couch on **page 32** deals with the present status of antioxidants for feed trade use and with past and current research with some of the antioxidants.

FUTURE TRENDS: Future trends in feed formulation—covering both nutrients and non-nutrient additives—are discussed by Dr. J. L. Krider on **page 48.**

MERCHANDISING: Feed merchandising and bulk delivery, as practiced on the East Coast, are covered by Robert F. McLeod on **page 18.** Various mobile grinding-mixing practices are outlined on **page 86.**

LIABILITY: The feed man's liability in connection with sales of feeds, and other products is explained by Mortyn K. Zietz on **page 52.**

RUMEN ORGANISMS: Dr. Charles W. Turner, on **page 78,** tells of the preparation and use of dried rumen organisms in feeding cattle.

FISH MEAL: A new fish meal development—use of antioxidants to improve quality—is described by Dr. Thomas L. Meade on **page 14.**

OTHER: An article by Joseph Chrisman on **page 61** tells of research on methods to control the spotted alfalfa aphid. Research on self-feeding of fattening cattle is reviewed on **page 104.** A new feed plant is described on **page 56.** Nutritional improvements and what they might mean to feed volume are discussed on **page 108.**

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Cuban Molasses Output Down; Prices Up

Cuban production of high sugar molasses has been running much below expectations and it was reported in the trade this week that Cuban producers would exercise a contract option and cancel sales contracts for this type of molasses as of May 31. As a result, prices of molasses have been increased by several U.S. importers and distributors to 15¢ gal.

At the present time it is uncertain just how much of a cutback in U.S. molasses feed supplies would result from such a contract cancellation in Cuba, but it indicates that supplies will be smaller than previously expected.

Some trade sources point out that U.S. buyers would be able to get a fair quantity of the contracted high sugar molasses out of Cuba before the end of the month were it not for a shortage of ocean freight space to the U.S. It was reported by the USDA marketing service this week that final estimates on high test production in Cuba would run about 115 million gallons.

Late this week the molasses market had firmed considerably, with some May-June offerings at 14½¢, but most were at 15¢ gal., New Orleans.

★ FEEDSTUFFS ★

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Check on a Prophet

LET'S check up on a prophet. It is not done to put him on a spot, but it is interesting to see if a theory concerning a feed industry pattern is working out. Whether it is or not, the prophet can be credited with some stimulating thinking on the development of the feed business.

In 1953, Oscar Straube, president of Pay Way Feed Mills, Kansas City, made a speech to the annual convention of the Central Retail Feed Assn. at Milwaukee. The meat of his talk was expressed in this summary: "Estimates of formula feed consumption for a number of years back indicate that the business runs in seven-year cycles. If the cycle pattern continues, a lower tonnage in 1954-55 than at present may be expected, but chances seem favorable for a new all time high in 1958."

Formula feed production statistics for the years prior to 1946 were hardly more than informed guesses at best, and wide variance can be found in the estimates. Mr. Straube combined personal observations with other statistics and information available to arrive at the production of the early years. As he explained it: "It has been found that unless there are basic shifts in consumer preferences there is a definite relationship in prices of most commodities over a period of years. Since prices have a great tendency to affect production, we have used them and other related data to make our estimates."

Mr. Straube said that his figures showed an "up point" in formula feed production each seventh year since 1915, and that half way between each high point there had been a "down point."

The first world war started in 1914 and carried feed tonnage to a comparatively high level during the following few years, according to Mr. Straube. The actual high point may have been 1916 or 1917. The war ended the latter part of 1918, and feed tonnage started slowing up then. The biggest drop came in 1919 and into 1920, when there were severe market breaks which, combined with low tonnage, bankrupted many feed manufacturers.

By 1922, the price paid to farmers for their produce had improved and feed tonnage showed some increase, although it rocked along at a low level until it was given a great impetus in 1925 by the first use of vitamin D, which permitted the growing of animals and poultry indoors. This important nutritional discovery coupled with the 1929 boom took tonnage to a high level rapidly. So, 1929 was a great year for the industry.

Came the depression and the low of 1933, and most all of the business was gone. However, the 1933 depression did not bring as many casualties in the feed industry as did the 1919-20 period. This is one of the first indications that the feed industry 7-year cycle was turning into a trend, according to Mr. Straube. The drouth situation which followed the depression brought the industry to new heights of tonnage in 1936.

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THE industry was now on the march, soundly entrenched with a wealth of nutritional information which brought to the feeders' attention the extra profits available through the proper supplementing of grains and roughage with vitamins and minerals," Mr. Straube said. "The march was so strong that the adverse business conditions of 1937-38 only temporarily halted the upward surge.

"According to our 7-year cycle, 1943 was to be our next top year. It held true to form, with a 35% increase over 1942, establishing the beginning of a high plateau which carried forward through 1945.

"Tonnage declined sharply in 1946 and held about even in 1947 and 1948. 1947 is our low year in this cycle. Since the cycle usually runs slightly over 7 years, it appears that 1951 would be our up year. Although the trend continued upward into 1952, the increase was in the first six months of the year. There was a slight drop for the first part of 1953. According to the 7-year plus cycle, tonnage may be expected to be lower into 1954-55 than it is today. However, because the cycle is evidently in an upward trend the reduction may not be any more than a slight lowering in volume similar to that which occurred in 1939-40 and in 1947."

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THUS, according to Mr. Straube, the formula feed industry experienced highs about 1915, 1922, 1929, 1936, 1943 and 1951, and is due for another one in 1958.

What has happened since he gave the talk in 1953? Here are estimates based on tonnage reports by members of the American Feed Manufacturers Assn.:

Year	Tonnage
1951	32,800,000
1952	34,400,000
1953	33,700,000
1954	35,000,000
1955	33,600,000

Prognostication is far from an exact science, of course. The 7-year cycle Mr. Straube mentions cannot be established or disproven in such a brief span of time or, for that matter, without a much more scientific base and study of statistics and influences. It is indicated that formula feed volume has grown substantially. It has more than tripled since 1930; probably it is six times what it was at the bottom of the depression. An important point to realize is that, despite the remarkable overall growth during the period, there are years when production declines. These dips are to be expected. They do not mean that the limits of expansion have been reached, or that the feed business is collapsing. The "down points" are followed by "up points" and vice versa, but the general atmosphere in the feed industry is one of continuing growth. With an expanding population, better feed efficiency, and the trend toward an animal agriculture, the formula feed industry has hardly begun to realize its potential, despite the growth it has undergone.

Some figures compiled by T. E. Wilkens, manager of the forecasting division, Ralston Purina Co., and published in the 25th Anniversary Issue of Feedstuffs a year ago, showed manufactured feeds as a percent of total concentrates fed. These indicated that only 10.6% of the feeds used in 1934 were formula feeds. The percentage has grown almost without setback in any year until it stood at 27.4 in 1954 and undoubtedly is somewhat higher now. This is the record that is of more importance than the tonnage produced, as far as showing the direction the feed industry is heading. A 27% rating is high in comparison with former years, but it is low in comparison to what can be achieved.

The large market that has not been developed as yet is the best indicator of expanding opportunity for the feed business.

A FEEDSTUFFS FORMULA FEEDS: HOW'S BUSINESS? FEATURE

A reduced level of demand for formula feeds was noted in several areas this week, with feeder resistance to firm prices frequently cited as a deterrent to better sales. On the other hand, the late hatch of chicks and improved pork prices were helping to push sales in some parts of the U.S. Ingredient market changes were mixed, with millfeed and alfalfa meal easing and oilseed meals and molasses stronger. The index of wholesale feedstuffs prices advanced .9 point to 209.2 and the feed grain index dropped .9 point to 214.6 in the week ending May 16. (Ingredient details on pages 128-130.)

Northwest

Formula feed business generally held to the volume of the previous week in the Northwest, and prospects continued good for most firms that total sales for the month would equal or better records for May last year. Some manufacturers noted, however, that demand seemed to lack some of the punch apparent in the past two weeks.

Helping to bolster volume this week was good demand for baby chick feed, overcoming to some extent the leveling off noted during April. It is apparent that the late hatch of chicks is providing a good outlet for starters. The state hatch-

(Continued on page 132)

BONUS READERSHIP

... where it counts!

This issue of FEEDSTUFFS is being distributed at the American Feed Manufacturers Assn. convention in Chicago as an extra service to industry readers and as a special bonus to FEEDSTUFFS advertisers.

For many years—until it has become a tradition—copies of the current issue of FEEDSTUFFS have been distributed at the AFMA convention, a service welcomed by AFMA members because FEEDSTUFFS is the weekly *newspaper* of the industry.

To advertisers, this means *special added impact* for their messages in the "AFMA issue."

If you have something to tell—and SELL—to feed manufacturers, we'd like to suggest you make a note RIGHT NOW to remind yourself to include the "AFMA issue" of FEEDSTUFFS next year (April 27, 1957) in your advertising plans.

FEEDSTUFFS

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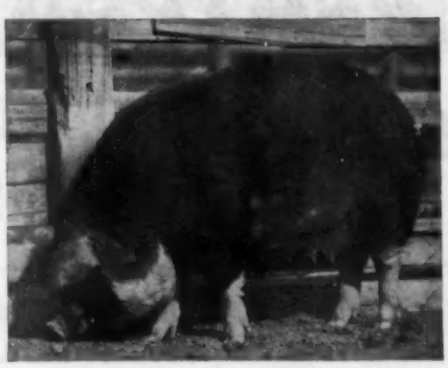

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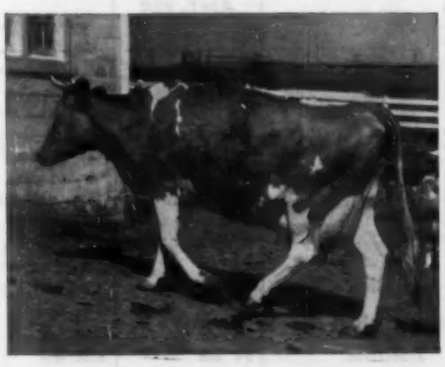

3 WAYS

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International Ahead of Schedule on Expansion Of Phosphate Facilities

CHICAGO—New facilities for doubling the present output of dicalcium phosphate at the Bonnie plant of International Minerals & Chemical Corp. will be in operation six months ahead of schedule, according to an announcement by Howard F. Roderick, vice president of the phosphate chemicals division.

"Constantly increasing demand plus an acute shortage of this high-quality feed supplement has caused us to place maximum emphasis on this part of the over-all program," Mr. Roderick said. "One key segment of the new unit will be on stream this week and other equipment is being especially built and adapted on accelerated schedule for early completion. Initial operation will be in June and full-scale output is expected early in July. This is six months ahead of the original schedule."

"At that time our already substantial volume of dicalcium phosphate tonnage will have been doubled," Mr. Roderick stated. "This is in keeping with International's continuing objective to serve the feed industry with adequate supplies of sound and proved feed phosphates. It must be realized, however, that there may be brief interruptions as the new units are integrated into the present system."

The Bonnie plant, located near Bartow, Fla., one of the world's largest facilities for the manufacture of dicalcium phosphate, is one of three plants producing feed phosphates in the company's phosphate chemicals division.

VETO SAID TO FACE PRESENT FARM BILL

WASHINGTON—Unless several of the objectionable provisions of the present farm bill now being debated in the Senate are eliminated, the measure seems headed for another certain veto. Top Republican leaders of the administration forces in Congress told Feedstuffs that the White House senses that it is in a position to insist on getting the bill it wants since field reports indicate dwindling interest in any farm legislation this year. These reports are also said to indicate that the much heralded farm revolt does not exist.

Vernon Green Dies

WASHINGTON — Vernon Green, long-time dealer in feeds and grain in the Eastern Seaboard area, south of Philadelphia and head of the Green-Mish Co., Inc., died here this week. He was taken suddenly ill last week end and died a short time later. Well-known in the industry, Mr. Green was a former director of the Grain & Feed Dealers National Assn.

Feed Manufacturer Licensed to Make Hormone Premix

Competition among feed manufacturers producing cattle supplements containing diethylstilbestrol apparently is taking a keener turn.

The U.S. Food and Drug Administration recently granted permission to the Gooch Feed Mills Co., Lincoln, Neb., to manufacture its own diethylstilbestrol premix, under the data of Dr. C. W. Turner, professor of dairy husbandry at the University of Missouri.

Practically all of the diethylstilbestrol premix marketed since first permission for its use was granted by the FDA a year and a half ago has been under the patents of the Iowa State College Research Foundation.

The Gooch supplement is quoted pricewise at a premium of $2.50 ton over the feed without diethylstilbestrol, as compared with a $5 premium which has obtained generally for supplements with a comparable stilbestrol content.

Dow Explains Status Of New Chemical for Cattle Grub Control

MIDLAND, MICH.—The Dow Chemical Co. this week outlined the research and commercial development status of a new chemical which has been shown in experiments to prevent the common cattle grub from developing within cattle.

The Dow statement was issued in connection with a U.S. Department of Agriculture release telling of experiments with the chemical, called Dow-ET-57. The compound, an organic phosphate chemical, is systemic; it is administered orally and moves through the bodies of cattle to destroy grubs wherever they may occur in an animal's flesh.

Dow spokesmen said the chemical was first synthesized by the company at Midland, Mich. At the company's Texas agricultural chemical laboratory, it was discovered that the compound showed promise as an animal systemic insecticide—one which, when administered orally, could kill certain internal and external insects without hurting the animal. USDA subsequently conducted tests described in a story on page 36 of this issue of Feedstuffs.

Dow-ET-57 at present is being made only in laboratory quantities and is available at this time only to a few state and federal research people working on cattle grub control. It will not be available for large scale tests until further work on toxicology and synthesis is completed.

J. W. Britton, manager of Dow's agricultural chemical product department, said a decision regarding construction of a plant to produce the chemical in commercial quantities will await outcome of current performance and toxicological tests.

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CALCULATED VALUES OF DEHYDRATED ALFALFA MEAL COMPONENTS

COMPONENT	AMT. PER TON	UNIT VALUE	BASIS	Value per Ton
Protein	340	$1.70/Unit	Meat Protein (1)	$28.90
Betaine	4000 Gm	14.0c/Gm	Commercial Concentrates	5.60
Choline	1000 Gm	0.15c/Gm	25% Feed Mix	1.50
Xanthophyll	190 Gm	30c/Gm (2)	Commercial Concentrates	57.76
Alpha Tocopherol	300,000 IU	10.5c/1000 IU	Comm. Acetate 20,000 IU/lb.	31.50
Carotene	200,000,000 IU	14.5c/Million IU	Comm. Vitamin A Acetate	29.00
Vitamin K	70 Gm	4.4c/Gm	Comm. Product	3.08
Niacin	36 Gm	0.8c/Gm	Comm. Product	.29
Pantothenic Acid	32 Gm	6.0c/Gm	Comm. Feed Supp.	1.92
Riboflavin	14 Gm	6.0c/Gm	Comm. Product	.84
Folic Acid	8 Gm	$1.00/Gm	Comm. Product	8.00
Replacement value	1320 lbs.	(3)		(3)
			TOTAL	$168.39

Note Not all of the items listed are necessarily in dehydrated alfalfa at the level desired, however, the calculations are based on what the cost would be to the user of dehydrated alfalfa if he went out to buy them.

(1) Chosen because the amino acid composition of alfalfa protein more closely resembles meat protein than it does oilseed protein.

(2) After deducting the value of the oil and carotene.

(3) Replacement value will depend on individual formulation, but is of real dollar significance. 1,320 lbs. is one ton less 680 lbs. Protein Carrier.

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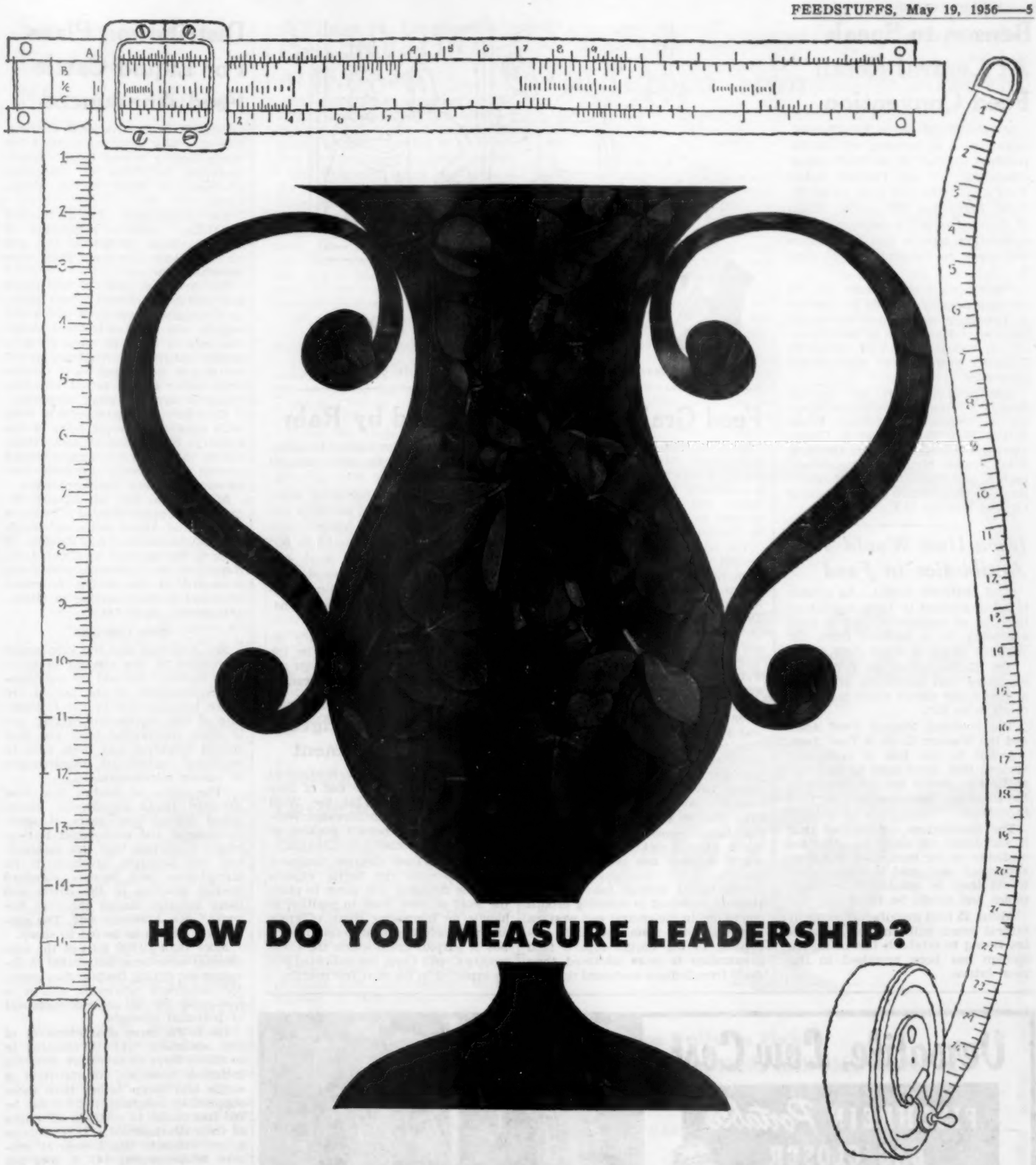

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FOR FEEDS WITH A FUTURE
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Benson to Speak At Central Retail Feed Convention

MILWAUKEE—Ezra Taft Benson, secretary of agriculture, will be the featured speaker at the 31st annual convention of the Central Retail Feed Assn. to be held June 4-5 at the Hotel Schroeder, Milwaukee. Eldon H. Roesler, executive secretary of the association, reports that Mr. Benson will speak on the afternoon of June 4.

Others who will appear on the two-day program include Dr. Robert H. Grummer, chairman of the animal husbandry department of the University of Wisconsin, and Dr. Henry H. Bakken, professor of agricultural economics.

Additional speakers will include Ronald F. Kennedy, executive director of the American Heritage Foundation, New York; Alvin E. Oliver, executive manager of the Grain & Feed Dealers National Assn., Washington, and Ralph T. Everett, president of the Empire Sales Training Center, Buffalo, N.Y.

Iowa Unit Would Tax Antibiotics in Feed

DES MOINES, IOWA—An opinion is being awaited in Iowa concerning taxation of antibiotics used in feed, according to a bulletin from the Western Grain & Feed Assn.

The State Sales Tax Office has suggested that antibiotics are drugs and as drugs should carry the 2½% retail sales tax.

The National Mineral Feed Assn. and the Western Grain & Feed Assn. objected to this line of reasoning, arguing that when used as feed, the antibiotics should not be subject to the sales tax, the same as other feed ingredients.

The associations recomended that if antibiotics are used as a drug for medicine or for medicated property, advertised and sold as such, they would then be considered as stock tonics and should be taxed.

About 15 feed manufacturers spent several hours with the tax committee trying to establish this point. An opinion has been promised in the near future.

"Seems like Beamish is taking wide advantage of his official greeting duties."

Feed Grain Prospects Bettered by Rain

MINNEAPOLIS — Moderate to locally heavy rainfall during the past several weeks has improved prospects considerably for spring seeded small grains and corn and soybeans, according to a crop bulletin published by Cargill, Inc.

The additional moisture was badly needed in the area from the Mississippi River westward over the Great Plains, although the amounts received in the extreme western portions of Texas, Oklahoma, Kansas and eastern Colorado were insufficient to provide any material benefit.

Spring seeded small grains show a wide range in growth and in general average on the backward side, the report states. Oats are "catching up" after a slow start throughout the central states, but show the effects of slow germination and growth in the north central areas. In the extreme northern sections, seeding of spring wheat, barley, oats and flax is being rushed to completion as fast as favorable weather will permit.

Oats are reportedly heading in the South Atlantic and Gulf states where warm weather has promoted rapid growth.

The recent rainfall has been extremely beneficial in relieving drouth conditions in the central and western sections of the main Corn Belt. According to the Cargill report, field preparation is more advanced than usual from Indiana westward through Nebraska but below normal temperatures and cold soils have delayed planting.

Corn planting is becoming more general throughout the southern and central sections as soil temperatures warm up to the desirable 55 to 60° range. In contrast, field work and planting have been further delayed by rainy weather from the Tennessee-North Carolina area to eastern Canada.

Early corn and soybeans are reportedly being cultivated in the southern states where both crops are making good to excellent progress.

N.Y. Harbor Dredged For Grain Movement

NEW YORK—Dredging is expected to be completed by the end of May on the harbor berth at the West Shore Railroad Grain Elevator, Weehawken, N.J., to permit docking of ocean going vessels.

The New York Central Railroad, which operates the berth, expects that the dredging will serve to place the Port of New York in position to handle an increasing share of grain exports, including substantial quantities of surplus grain which the Commodity Credit Corp, has indicated will be exported in the next few months.

Distribution Plans For Liquid Cattle Feed Announced

CRETE, NEB.—National distribution of a new liquid supplement for cattle feeding is now being started, according to Philip C. Anderson, president of Feed Service Corp., Crete.

The supplement, trade-marked "MOREA," contains a mixture of molasses, urea, phosphoric acid and an active hydrogen donor along with essential minerals.

Mr. Anderson said the new liquid feed will be distributed in two forms: as a complete supplement which will require only grain or low-cost roughage such as silage or range grass to satisfy nutritional requirements of cattle and sheep, and as a concentrate which can be mixed with molasses to form the same compound.

Feed Service Corp. expects to work with agents in various parts of the country, Mr. Anderson said. These agents will mix a concentrated liquid premix with locally available molasses to produce the supplement.

MOREA is the supplement described in a paper entitled "The Roles of Essential Amino Acids and Available Hydrogen in the Feeding of Urea to Ruminants," by Dr. J. L. C. Rapp and Mr. Anderson, which was presented at the recent American Chemical Society meeting in Dallas. (Feedstuffs, April 14)

"New Concept"

Mr. Anderson said the supplement represents "a new concept in ruminant feeding." He said the nutritional requirements of the animal are taken into account in the formulation of this supplement as they are in other commercial feeds and that special attention has been paid to satisfying nutritional requirements of rumen microorganisms.

"The value of feeding this new patented liquid supplement, established during four years of semi-commercial and commercial testing, makes it certain that this material, and the principle involved in its formulation, will become standard feeding practice in the cattle and dairy industry during the next five years," Mr. Anderson said. The supplement also is to be fed to sheep.

More than 10,000 tons of the supplement have been distributed in development during the past four years, Mr. Anderson continued, and it is now ready for full scale development of potential markets.

He listed these characteristics of the material: "(1) It contains in available form all necessary elements including hydrogen, for nutrition of cattle and sheep (other than those supplied by roughage); (2) it can be fed free choice to cattle in all stages of their development; (3) it remains a low viscosity liquid even at subzero temperatures; (4) it does not attract flies; (5) it cannot cause toxic effects; (6) it can be fed in concrete, aluminum and black iron tanks."

Mr. Anderson went on to tell of experience and experimental work on the application of the supplement in creep feeding calves and lambs, raising cattle, finishing cattle, feeding dairy cattle, feeding sheep and in drouth conditions for cattle on range grass.

Research work at agricultural colleges is continuing, Mr. Anderson said.

Sells Elevator

CEDAR RAPIDS, IOWA—R. C. Booth announced this week that he has sold his elevator in Riverside, Iowa, to the Riverside Grain & Feed Co., Inc. President and manager of the new company is Arnold G. Rarick and the secretary is Victor Strabala. Mr. Booth is president and treasurer of the Piper Grain & Milling Co., Inc., Cedar Rapids.

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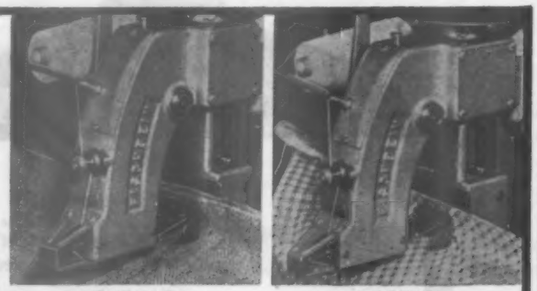

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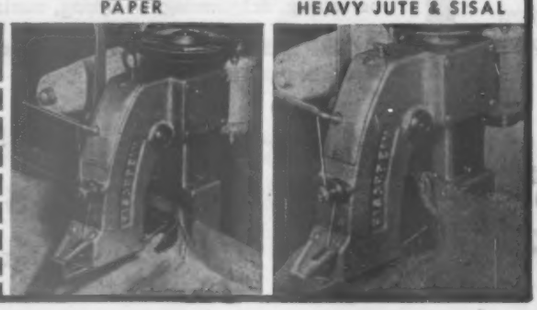

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Scholarship Fund Established by N.W. Feed Group

MINNEAPOLIS — A scholarship program for University of Minnesota undergraduate students studying animal nutrition, believed to be the first of its kind sponsored by a local feed manufacturers' group, was approved this week by the Northwest Feed Manufacturers Assn.

Under the terms of the program, six students in the departments of animal husbandry, dairy husbandry and poultry husbandry who in their studies are placing emphasis on nutrition, will share $1,800 in aid.

Approved by the board of directors of the association May 14, and given unanimous enthusiastic approval by the membership of the association that night, the scholarship program replaces the annual grant for nutrition research made by the association to the university.

The program is aimed at helping deserving and competent students complete their training at the university so that "they can apply their knowledge to the improvement of nutrition of the livestock and poultry of this country."

Junior and senior men students, or sophomore students who give reasonable assurance of completing the requirements for the B.S. degree in the three departments specified, will be eligible for the assistance. Each of the six students will receive $100 for each of the three quarters in the school year. A student is eligible to receive the aid for a maximum of six quarters.

Criteria which will serve as guides in determining the recipients of the scholarships will include academic aptitude, vocational promise, personal attributes, leadership and financial need. The university will administer the program.

Setting up the scholarship fund with the university for the feed association were Earl H. Hanson, Archer-Daniels-Midland Co., immediate past president of the association, and A. H. Roffers, Northwest Cooperative Mills, Inc. The men were praised for their work by James C. North, Nutrena Mills, Inc., president of the association.

Cargill, Inc., Forming Special Products Unit Headed by R. B. Parrott

MINNEAPOLIS — Formation of a new division of Cargill, Inc., to be known as the special products division, has been announced by John H. MacMillan, Jr., president.

The new division will begin operation on June 1. It will immediately assume all functions of Cargill's hybrid corn department and those pertaining to molasses products, which are now being handled by other parts of the company. Later, the special products division will undertake merchandising of new agricultural products as they are developed by Cargill's research department, Mr. MacMillan said. This activity will be accelerated by a new research center being constructed by the company near its lake office at Wayzata, Minn., a Minneapolis suburb.

In charge of the new division will be Robert B. Parrott, assistant vice president and Northwest regional manager of Cargill's grain division. Succeeding Mr. Parrott as grain division regional manager here will be John Cole of the company's Minneapolis office.

Another organizational change effective at Cargill on June 1 will be the merger of its services division into its administrative division. H. B. Juneau, vice president for services will continue in that capacity and as deputy head of the administrative division. The latter is headed by H. Terry Morrison, vice president.

William H. Danforth Estate Valued At $5,777,243

ST. LOUIS—A valuation of $5,777,243 was placed on the estate of William H. Danforth, feed manufacturer and philanthropist, in an inventory filed last week in probate court.

Mr. Danforth, board chairman of the Ralston Purina Co., died Dec. 24. Under his will, filed previously, most of the estate is to go to charity.

Industrial stocks are the major asset. Their worth, based upon market values at the time of his death, was put at $5,238,119. The price of some of the major blocks of securities has risen since.

Other assets included: Government bonds $74,650, cash and insurance $433,961, miscellaneous items $29,947.

The largest single holding is 17,220 shares of Ralston Purina stock. This was carried by the inventory at $100 a share. Current bid price on this stock is $115.

Under Mr. Danforth's will, 15,000 shares of the stock will go to the Danforth Foundation, which he and Mrs. Danforth established in 1927 to aid students, particularly in their spiritual development. The residue of the estate, after specific bequests to charities and individuals, is to go to the foundation.

Largest of the stock holdings in 101 other firms were: Standard Oil companies, 8,149 shares, $734,546; Union Carbide & Carbon Co., 2,450 shares, $267,050; Gulf Oil Corp., 2,574 shares, $235,842; McDonnell Aircraft Corp., 4,000 shares, $109,500; General Electric Corp., 13,220 shares, $739,260; Sears, Roebuck Co., 3,017 shares, $108,989; First National Bank in St. Louis, 1,718 shares, $107,375; Eastman Kodak Corp., 1,002 shares, $81,663.

Honeggers' Buys Large Iowa Farm Buildings Firm

FAIRBURY, ILL.—Honeggers' & Co., Inc., this week announced completion of the purchase of Green Gable Builders, Inc., Onawa, Iowa, one of the world's largest manufacturers of pre-fabricated farm buildings.

Distribution of the Green Gable products, with sales running into the millions, is made primarily through feed dealers, hatcherymen and lumber dealers throughout the Midwest.

E. F. Dickey, executive vice president of Honeggers', said that the new line will also be marketed through the large Honegger feed dealer and associate hatchery organization.

The purchase contract was signed this week by Mr. Dickey and J. H. Maloney, Cedar Rapids, Iowa, president of the Green Gables firm, but transfer of the assets to Honeggers' will not take place until June 1. William Fuhr, secretary-treasurer and general counsel for Honeggers,' assisted in making the purchase arrangements.

The Honegger firm is in the feed manufacturing and hatching business at Fairbury and Forrest, Ill., and has feed mills at Fairbury, Mansfield, Ohio, and Indianola, Iowa. The firm also has plans to build a new push-button feed mill at Boone, Iowa, this summer.

NEW EXCHANGE MEMBERS

SAN FRANCISCO — Two firms have been accepted into membership in the San Francisco Grain Exchange within the past week. The Holly Sugar Co. of San Mateo, Cal., is represented by Arthur C. Lundin, sales manager of the dry pulp division. The C. Itoh Co. (America, Inc.), Portland, Ore., has taken out company membership and is not represented by any one individual.

Snags in Exporting Poultry To Europe Stimulate Efforts

By JOHN CIPPERLY
Feedstuffs Washington Correspondent

WASHINGTON — The finding of some unsuspected snags during a preliminary investigation of European markets for U.S. poultry has stimulated the big four associations in the poultry and turkey industries to top level cooperative efforts in developing these markets in a big way.

The preliminary findings disclosed that some basic spade work has to be done—the type of spade work that each sales organization operating in the U.S. must do before it can get its products before the consumer. (Also see story on page 110.)

There are hitches, but the campaign for these markets is by no means stopped in its tracks. The originators of the program, Arlo Turner, the Grange Co., Modesto, Cal., and Homer Huntington, former general manager of PENB, have been stimulated to new efforts by the obstacles. Their work has resulted in enlistment in the campaign of the work horses in the promotion field for turkeys and poultry—the Poultry & Egg National Board, the National Broiler Council, the American Poultry & Hatchery Federation and the National Turkey Federation—plus the American Feed Manufacturers Assn.

As a result of the cooperation of the big four poultry organizations and the AFMA, the U.S. Department of Agriculture has agreed to lend a hand to make possible on-the-ground promotion of U.S. turkey and poultry products in western Europe. This agreement with USDA provides that some part of foreign currencies made available under Public Law 480 sales of U.S. agricultural surpluses will be

(Continued on page 131)

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U.S. Adds Drouth Counties, Extends Program for Some

WASHINGTON—The U.S. Department of Agriculture this week announced the designation of three counties and part of a fourth in New Mexico and four counties in Texas as drouth disaster areas where eligible farmers and ranchers may participate in the emergency feed program.

At the same time, USDA said that 74 of 121 Texas counties in which the emergency program was to be terminated May 15 will be automatically reinstated because of continuing drouth conditions.

New designations include:

New Mexico (3)—Mora, San Miguel, Roosevelt; the remainder of Harding County.

Texas (4)—Armstrong, De Witt, Lipscomb, Maverick.

Reinstated Texas counties (74) include: Atascosa, Bandera, Bee, Bexar, Borden, Brewster, Caldwell, Carson, Coke, Comal, Concho, Crane, Crockett, Culberson, Dallam, Deaf Smith, Dimit, Duval, Edwards, Frio, Gillespie, Glasscock, Goliad, Gonzales, Gray, Guadalupe, Hartley, Hays, Howard, Hudspeth, Hutchinson, Irion, Jeff Davis, Jim Hogg, Karnes, Kendall, Kerr, Kimble, Kinney, LaSalle, Live Oak, Loving, McMullen, Martin, Medina, Menard, Midland, Moore, Oldham, Pecos, Potter, Presidio, Randall, Reagan, Real, Reeves, Roberts, Runnels, Schleicher, Sherman, Starr, Sterling, Sutton, Terrell, Tom Green, Upton, Uvalde, Val Verde, Ward, Webb, Winkler, Wilson, Zapata, Zavala.

These designations brought to 225 the number of counties in 11 states to be disaster designated as of May 14 because of drouth, floods or extreme winter weather.

These include: California, 8; Colorado, 7; Connecticut, 8; Kansas, 5; New Mexico, 12; Oklahoma, 4; Oregon, 16; Texas, 125; Utah, 8; Washington, 24; and Wyoming, 8.

Under provisions of the program, eligible farmers and stockmen in designated areas may obtain certain feed grains or mixed feeds at a reduction in price of $1 per cwt. of grain. The program is designed to help stockmen in stricken areas maintain basic livestock herds.

Meanwhile, USDA this week rang down the curtain on the 1954 drouth feed program effective as of June 1, 1956. It is noted that this action affects only the 1954 program, whereby it provides cut-off dates for redemption of drouth certificates.

USDA said no certificates will be issued after the cut-off date and no extension of time will be granted for certificates issued prior to the date. In the case of certificates issued to dealers suspended under the program, where it is subsequently held that the dealer is entitled to issuance of dealer certificates, farmers purchase orders held by such dealer at time of suspension and which had not expired, will be extended for a reasonable period for the dealer to present such purchase orders to county committees and receive dealer certificates.

Certificates issued prior to the cut-off may be presented in accordance with regulations within 120 days from date of issue or any extension of time granted prior to date of cut-off. The same grant of further time for presentation is authorized for certificates extended to dealers who have been under suspension but whose right to use of farmers purchase orders has been subsequently upheld.

Texas Says It Wants No Added Drouth Aid

WASHINGTON — This week the U.S. Department of Agriculture was handed a surprise dividend when Texas state officials informed the big federal agency that when and if Texas cattlemen need added relief from drouth conditions, the governor would take the initiative.

This information came to USDA officials who were just about to convene their feed and drouth groups to devise machinery for a hay program for the drouth-stricken counties. As a consequence, the USDA meeting was cancelled before it ever started.

However, the pressure for an increase in the federal discount of $1 cwt. for Commodity Credit Corp. feed grains to $1.50 remains. But there is little disposition at USDA to approve any such advance and unless political heat gets too great for even the most steadfast USDA officials it now seems unlikely that any increase will be granted.

50c ADM Dividend

MINNEAPOLIS — Archer-Daniels-Midland Co., Minneapolis, declared a dividend of 50¢ a share, payable June 1 to shareholders of record May 21.

An improvement of $138,205 in net profits for the 9-month period ending March 31 over a year ago was disclosed by Thomas L. Daniels, ADM president.

Net profit for the first three quarters of ADM's fiscal year, was $4,712,966, equal to $2.89 a share, against $4,574,761, or $2.78 a share, in the same period last year.

Dean McNeal One Of Three Pillsbury Executive V. P.'s

MINNEAPOLIS — Dean McNeal, formerly vice president of Pillsbury Mills, Inc., was one of three executive vice presidents elected this week by Pillsbury's board of directors. Also elected were B. J. Greer and R. J. Keith.

President Paul S. Gerot said the move was made "for more decentralization of management, to put more authority and responsibility into the hands of more people all the way down the line and to achieve our goal of stronger divisionalization whereby we can readily assimilate further expansion either in our present fields or in new ones."

It also puts the right emphasis on the importance of Pillsbury's feed division, he said.

Mr. McNeal will report to the president on all matters concerning commercial feeds, grain and feed ingredients merchandising, and the company's procurement function.

Mr. Greer will report to the president on all matters concerning the baking and institutional industry in this country, the Canadian mills and the overseas business. He also will administer all company production and traffic operations.

Mr. Keith will report to the president on all consumer items sold through grocery stores.

Production Chief

The board also elected John P. Snyder vice president in charge of production. James C. McNeil, formerly feed production manager for the company, was named director of flour milling production to succeed Mr. Snyder. A replacement for Mr. McNeil in the feed production post has not yet been announced.

Dean McNeal joined Pillsbury after serving on the OPA during the war. He set up Pillsbury's business analysis department in 1947, later took over procurement, grain and feed ingredient merchandising and the commercial feeds division, becoming vice president in 1950. He is 43.

Mr. Greer joined Pillsbury in 1926, worked through grain inspection and procurement into production and in 1942 headed West Coast operations. He returned to Minneapolis as a company vice president in 1952 to direct company-wide production operations. He is 51.

Mr. Snyder has been with Pillsbury since 1935, working first in the Minneapolis mill office and later in the Springfield plant. He became director of flour milling production in 1953.

James McNeil joined Pillsbury in 1946 as a grain buyer, later became assistant to the plant manager at Ogden, Utah. In 1950 he was appointed plant manager at Ogden, and then in 1953 transferred to Pillsbury's feed division at Clinton, Iowa.

Dean McNeal

Building Damaged in Hoffman-Taff Blast

SPRINGFIELD, MO. — An explosion in a chemical reactor late May 14 heavily damaged one manufacturing building of Hoffman-Taff, Inc., and caused lesser demage to several other structures of the company.

Production of the company was suspended during the cleanup operation, but was resumed within 48 hours of the blast. Two employees received minor cuts and bruises.

Walter H. Hoffman, president of the firm, was in Los Angeles visiting the company's branch office when the accident occurred. He returned to Springfield immediately.

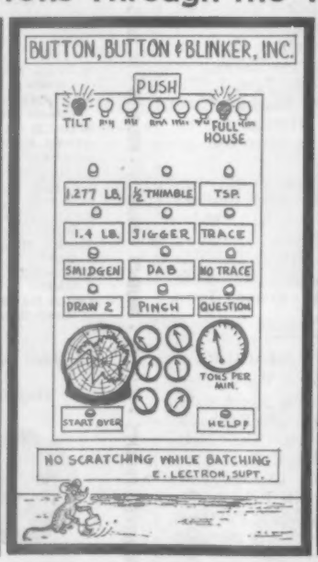
Mr. Hoffman said equipment used in the manufacture of the company's two principal products, choline and calcium pantothenate, was not directly involved in the explosion. The company is a major supplier of choline and calcium pantothenate to the feed and pharmaceutical industries.

Cause of the explosion has not been determined, Mr. Hoffman said. Although damage to one building was heavy, it is believed equipment losses will not be great. Small secondary fires that followed the explosion were extinguished quickly.

The board of directors authorized repairs to buildings and equipment to begin immediately. There was no immediate estimate of the amount of damage, which is covered by insurance.

Automation: Pushing Buttons Through the Years With B.B. & B., Inc.

THEN—Grandpa Button wore his finger out here.



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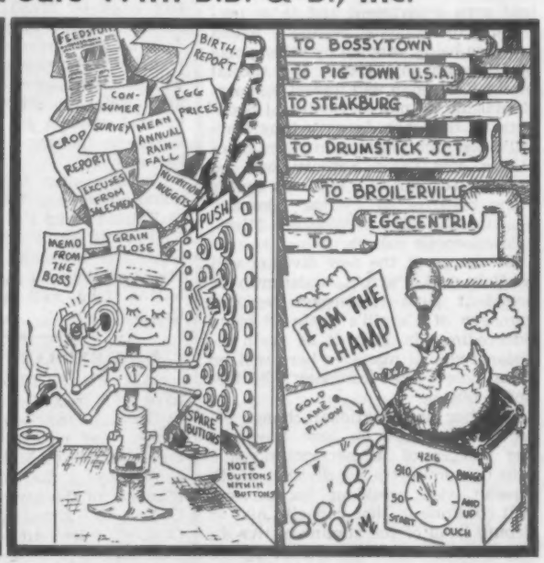

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UNCLE TOM'S FEED FABLES

We used to say a man was screwy or that he had bats in his belfry —meaning he was just plain nuts. But when we said he had gone loco, that was different, according to my Grandad.

He says they had a locoweed back in Ohio where he came from. When a horse ate any locoweed it'd stagger around and lose all sense of balance. They'd rare up and jump over small sticks and stones like they were as high as a fence. Finally they'd get so they'd just stand still for fear they were going to stumble over a blade of grass.

I think maybe back in the thirties we just about cleaned up all the locoweeds there was—all of us went loco—but I'm not so sure. Recently I ran into a couple of my gloomy-eyed feed friends and after listening to all their cryin' I'm afraid maybe the darn stuff has started to sprout again.

Sioux City Exchange Sets Up Scholarship

SIOUX CITY—The Sioux City Grain Exchange has set up a scholarship at Iowa State College with the purpose of helping both the grain trade and someone interested in such a career.

Donald J. Schrickel, new president of the exchange, said that the scholarship would be given some worthy pupil who will agree to take a course in grain elevator management and feed manufacturing. It will be worth $250 and available the next scholastic year.

"We feel that it will be an excellent course for anyone interested and that the person taking it will be ahead of anyone just going into the grain business as a career," Mr. Schrickel said.

The course at Iowa State College is a new one, patterned after one at Michigan State College.

Mr. Schrickel, manager for the Quaker Oats Co., was chosen president of the exchange at its recent annual dinner meeting. He succeeds E. J. Guiane, chief inspector for the exchange.

Other officers elected are Dwayne A. Maher, manager for Bartlett & Co., first vice president; Robert Doherty, buyer for the McMaster Grain Co., second vice president; Robert L. Keyes, manager of the Archer-Daniels-Midland Co., treasurer; and Donald P. Suttie, president of the Corn Belt Sulpply Co., Inc., secretary.

NEW FEED MILL

LUTHER, IOWA—A new feed mill is being built by the Farmers Cooperative here. The $50,000 mill is expected to be in operation this summer.

District Meetings

HUTCHINSON, KANSAS — The Kansas Grain & Feed Dealers Assn. has announced a series of four district meetings, at which L. A. Laybourne of Simpson, Laybourne, Miller & Stark, Salina, will present a program on cost studies in country elevator operation. Dinner and a social hour will feature each of the meetings, which will take place as follows: Atchison, May 21, Atchison Hotel at 5:30 p.m.; Iola, May 23, Kelley Hotel, 3 p.m.; Beloit, June 2, Municipal Building, 3 p.m.; Colby, June 9, Community Building, 3 p.m.

USING PORTABLE UNIT

EVANSVILLE, WIS. — A Daffin portable feed mixer has been added to the operations of the Evansville Feed & Fuel Co. The new mixer will supplement the stationary equipment in the mill.

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By Dr. A. C. Todd
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Do W. K. with Parasites
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LIVESTOCK CONSERVATION NEWS
Published Periodically by Livestock Conservation, Inc., in the Interest of Reducing Livestock Marketing Losses
Livestock Industry Mobilizes to Fight Parasites
Long known enemies of hogs and sheep, internal parasites in cattle are now recognized as one of the cowman's most vicious profit eaters.
Read here about the . . .
CARE and FEEDING of LIVESTOCK PARASITES
By D. C. BOUGHTON
Reprinted from The BREEDER-STOCKMAN, March 1954
Circular S-78
September 1954
UNIVERSITY OF FLORIDA
AGRICULTURAL EXPERIMENT STATIONS
WILLARD M. FUSELL, Director
GAINESVILLE, FLORIDA
Internal Parasites of Cattle
Their Control With
Phenothiazine and Management
LEONARD E. SWANSON, Parasitologist
WALTER R. DENNIS, Assistant Parasitologist
WILLIAM M. STONE, JR., Assistant in Parasitology
University of Florida Agricultural Experiment Stations
Fig. 1. Experimental Cattle at the Animal Parasite Laboratory, Department of Veterinary Science, Florida Agricultural Experiment Station.
Hidden Enemies
can ruin herd health and slash milk production.
By JOSEPH C. HAGGOTTE
Dairymen . . . profit from the experience of others . . . read this article on worm control reprinted from PENNSYLVANIA FARMER

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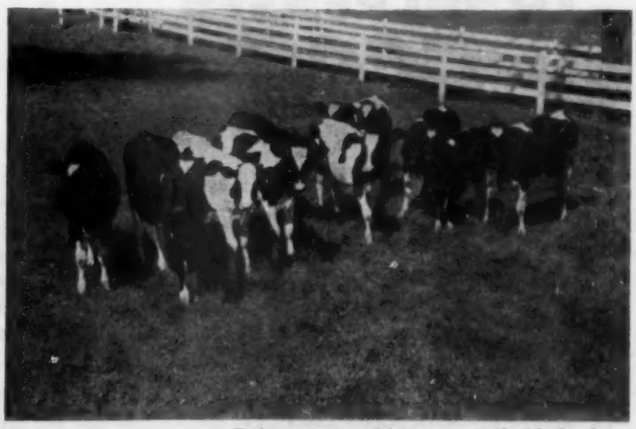

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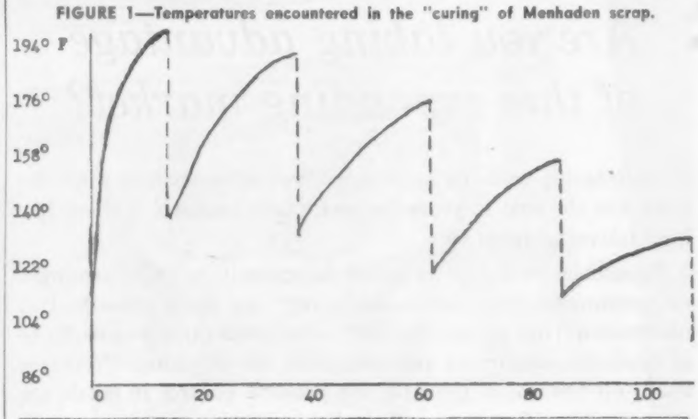
A New Development in Fish Meal Processing

By Dr. Thomas L. Meade

EDITOR'S NOTE: A significant new development in the processing of fish meal was discussed at the recent meeting of the Industrial Products Division of the National Fisheries Institute. The new development is the use of antioxidants to improve fish meal quality. Dr. Thomas L. Meade, New Jersey Menhaden Products, Inc., Wildwood, N.J., told of processing and feeding research on the addition of an antioxidant to fish meal. "The proper application of an antioxidant in the processing of fish meal will materially contribute to improving protein quality and will enable the production of a more uniform product," Dr. Meade said. Also, he said, the addition of an antioxidant probably exerts a favorable effect on the nutritive value of the residual oil, and, with proper stabilization, the oil content of fish meal will contribute significantly to the energy level of the ration. The accompanying article is the text of Dr. Meade's report at the fisheries meeting.

Probably one of the least understood steps in the processing of Menhaden fish meal is the "curing" process. This step varies somewhat between fish reduction plants; however, in general it may be regarded as the process whereby scrap discharged from a dryer is blended, allowed to undergo a heating to equalibrate its moisture and with successive turnings to reach the temperature of the surrounding air. There is little doubt that one of the primary reactions, involved in the curing process, is the autoxidation of the unsaturated residual oil. As for the side reactions

FIGURE 1—Temperatures encountered in the "curing" of Menhaden scrap.



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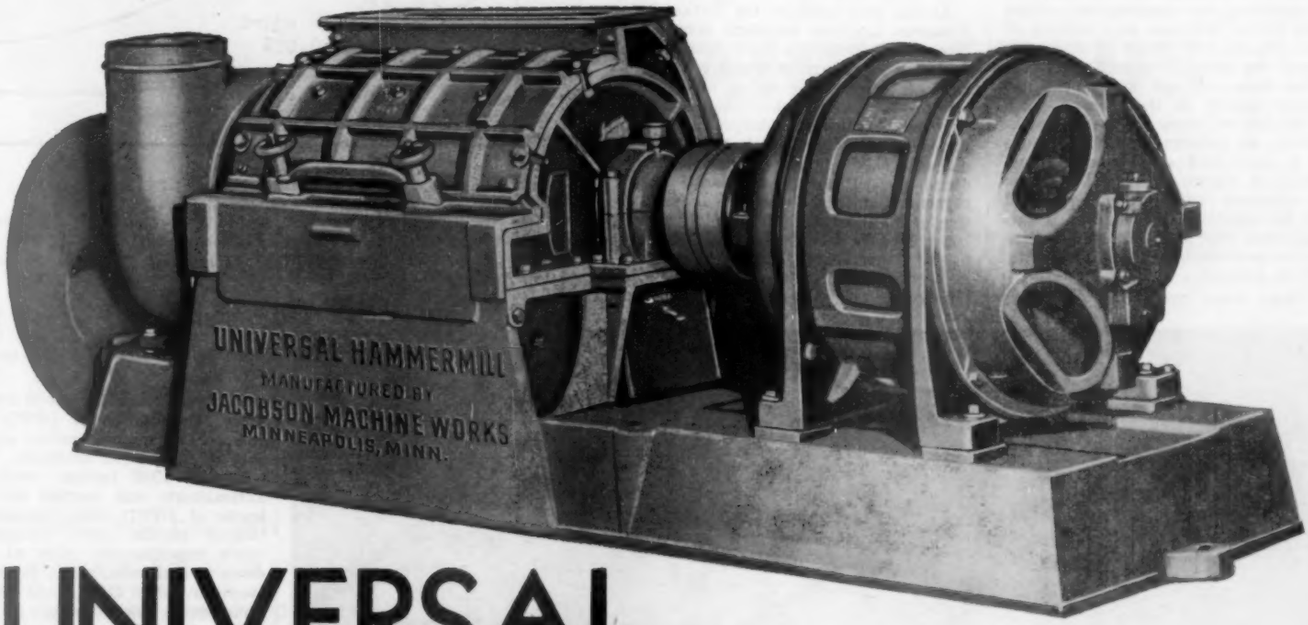

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and effects, they are largely unknown.

Initial studies on scrap piles indicated that there was an almost immediate rise in temperature when scrap was piled after being discharged from a dryer. If unchecked, the temperature may rise to the combustion point. In practice the piles are turned at intervals, with a resultant rapid dissipation of heat. Thus, it is possible for the operator to maintain the temperature within safe limits; however, poor control of this process will result in overheating of the scrap. Overheating at this stage may seriously impair the nutritive quality of the meal because of its low moisture content. The behavior, as reflected by temperature of a controlled scrap pile is illustrated in Figure 1. Since there was no apparent induction time required for the initiation of oxidation, it was suggested that appreciable oxidation of the residual oil occurs during the drying process.

Under some conditions, fish meal prepared from apparently "cured" scrap undergoes further oxidation which normally results in caking and in some cases excessive heating. In either event the oxidation causes considerable financial loss to the processor because of the necessity for regrinding and handling and in extreme cases removal of the product from the market.

Study Undertaken

At the suggestion of the National Fisheries Institute technical consultant, Ralph Holder, a study was undertaken to determine whether antioxidants, which were widely used by alfalfa processors at that time, could be used to control oxidation in fish meal. Initial studies with the antioxidant N,N' diphenyl-p-phenylenediamine (DPPD) were conducted by personnel of New Jersey Menhaden Products, Inc., during the fall of 1954. Two one-ton scrap piles were used in this study. One pile served as a control and 3 lb. of DPPD was blended into the other pile. The temperatures of the two piles were recorded and are presented in Table 1.

The addition of DPPD at the 3 lb. per ton level greatly reduced the scrap pile temperature. When the scrap was ground into meal five days after the addition of DPPD, there was no rise in temperature as a result of subsequent oxidation.

FIGURE 2—Effect of DPPD on the oxidation of Menhaden scrap.

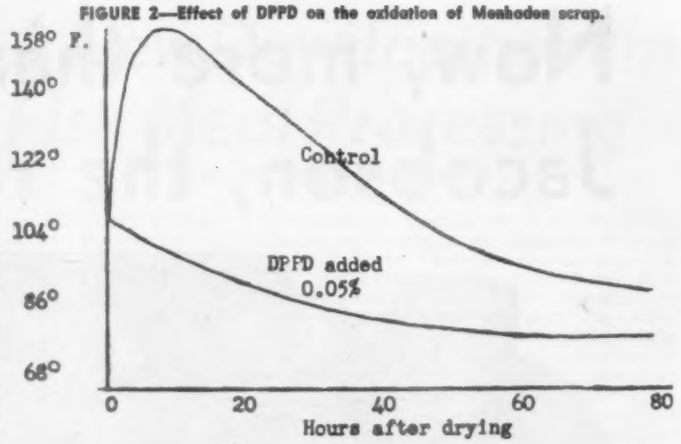


TABLE 1—The effect of DPPD on scrap pile temperature.

Treatment Hours after adding DPPD	3 lb. DPPD/T.	Control
1	90° F.	95° F.
4	93° F.	122° F.
8	96° F.	148° F.
24	110° F.	190° F.
	Scrap piles turned	
30	92° F.	160° F.

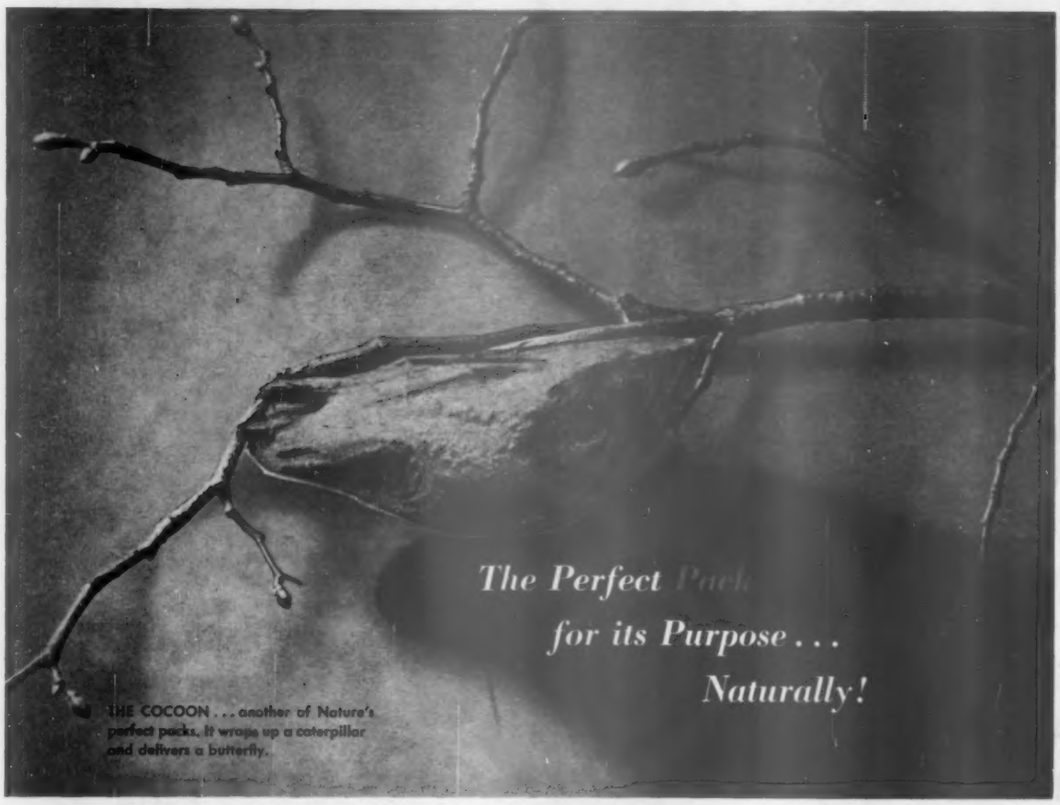
During 1955 further work with antioxidants was carried out. The levels of DPPD were reduced, and similar results were obtained on small experimental piles at levels down to and including ½ lb. per ton. However, when DPPD was added to either press cake or scrap, and large piles, representing normal production, were used, there was no significant lowering of the temperature, although the induction time was increased. These results suggested that the failure of DPPD to control oxidation under these conditions may have resulted from ineffective heat dissipation.

Further Trials

A series of trials involving scrap and meal was then initiated to determine whether DPPD could be used to control oxidation under conditions where the heat could be dissipated more effectively. Figure 2 illustrates the effect of adding DPPD at a level of 1 lb. per ton of scrap under these conditions. The rapid rise in temperature observed in the control lot is typical for scrap. The DPPD-treated lot showed no rise in temperature, which suggested that the rate of oxidation was probably very low. When DPPD-treated scrap was rapidly cooled after discharge from the dryer, there was no build-up in temperature as illustrated in Figure 3. Scrap prepared in this manner has been stored as scrap and meal for periods up to six months with no evidence of oxidative deterioration.

Similar results have been obtained with scrap prepared from simultaneously dehydrated press cake and condensed fish solubles. Since solubles contain a higher level of catalytic agents, such as heme, and on dehydration yield finer particles than press cake, scrap prepared from a combination of these products oxidizes at an accelerated rate and, unless carefully controlled, will reach excessive temperatures. Some of the unfavorable results obtained in feed-

(Continued on page 121)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WORLD'S OLDEST AND LARGEST SPECIALISTS IN VITAMIN PRODUCTS FOR FEEDS

Company-Owned Stores and Bulk Deliveries

As Practiced on the East Coast

By Robert F. McLeod

EDITOR'S NOTE: *Feed men throughout the U.S. may find of interest the background of the Chas. M. Cox Co., Boston, and its operation of 86 company-owned stores as outlined in the accompanying article. The experiences of the company in merchandising feed through its stores and with bulk handling are also detailed. The article is the text of a portion of a talk given by Robert F. McLeod, president, Chas. M. Cox Co., Boston, at the recent convention of the Texas Feed Manufacturers Assn. at Ft. Worth.*

v v

COMPANY BACKGROUND — The Chas. M. Cox Co. was founded in Boston Nov. 27, 1886. In those days there was no such thing as a combined feed for either animals or poultry. Grain was shipped almost entirely in bulk from the West, unloaded through elevators or sacked by hand in the car with small scales. In the beginning the major part of the business was selling on commission for western shippers.

In 1901, a mill in South Lancaster, Mass., was bought and a short time later we began to mix ground oats, linseed meal and hominy into a compound which we called Mastock. There was no such thing on the market as a dairy feed, horse feed or poultry feed; therefore, this compound was quite a thing and sold very well, and we found that we could get a better profit on it than corn meal or straight grain.

At about this same time, a fellow New Englander by the name of Park (later of Park & Pollard) discovered and brought on the market a product which he called "dry mash." It was a great innovation, as it meant doing away with feeding hens wet mashes. We studied this problem and started in compounding poultry feeds, including our own Mastock.

The South Lancaster mill was sold and in 1903 we built the St. Albans Grain Co. in St. Albans, Vt. When we began to mix feeds there we had to have a name for them—Wirthmore—which we copyrighted and have used ever since.

In 1912 we acquired Eastern Grain Co. in Bridgewater, Mass.; in 1914 Cunningham Grain Co. in Malden, Mass.; and in 1920 the Crosby Milling Co. in Brattleboro, Vt.

Over a considerable period of time the Cox interests had gradually acquired the ownership of about 20 retail grain stores, but it wasn't until January, 1926, when the company purchased the Cutler Co., with its 20 branch stores along the Boston & Albany Railroad, that it really entered into retailing on a large scale.

Another large acquisition took place in December, 1929, when the 20 Potter stores along the Boston & Maine Railroad became part of our organization. Later, in December, 1933, we acquired the Eastern Maine Grain Co. with numerous stores in northern Maine.

Today the retail organization consists of 86 stores, through which we distribute about 45% of our total production.

In February, 1954, we acquired Wirthmore Feed Co. in Olean, N.Y.; and in December, 1954, we took over the management of the two Kasco Mills plants, one in Waverly, N.Y., and one in Toledo, Ohio.

Today we service all of New England, New York State, Ohio, Pennsylvania, New Jersey, Maryland, the Delmarva peninsula, Virginia and lower Michigan.

With all of the extra demand for dairy and poultry products (with increased population) there will be a commensurate increase in the cow and chicken population—and running a feed store might appear to be a cinch. Such is far removed from the truth.

The fact of the matter is that attracting, each one his share of this new business, and at the same time holding his share of the old, offers us a real challenge and also an opportunity. It is a challenge to attract new poultrymen and dairymen into the area which you serve. It is a challenge to help the good operators already located in your area to grow and expand on a sound basis.

It means that you have to do a better job than has ever been done before in your feed community—and a better job for your customers—yes, and for their customers, too. For just as in other industries, units are growing in size (and becoming fewer in numbers), so the retail grain store, even in the face of added demand for feed, is becoming fewer in numbers, but each unit greater in size of operation.

Our 1956 model retail feed store must meet the challenge to do a better job for each customer—a job done well enough so that you and I may earn a fair return on our dollar investment as well as appreciation

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nf-180 now labeled and recommended for reduction of morbidity and for maintaining feed consumption, growth and livability in the presence of diseases such as:

CRD (Air Sac)
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nf180 is a chemical antimicrobial that is bactericidal against a wide range of disease producing organisms. These organisms include *both primary and secondary invaders.* Used alone or in combination with recommended levels of antibiotics, nf180 is very useful in preventing the occurrence of the diseases and disease complexes shown above. nf180 is also recommended for maintaining feed consumption, growth and livability in the presence of these diseases.

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PROVE CDP BETTER PHOSPHORUS SUPPLEMENT FOR GROWING CHICKENS

Purpose of Experiments

(1) To compare the efficiency of utilization of phosphorus in
(a) 17% CDP (Coronet Defluorinated Phosphorus) and
(b) ARG DCP (analytical reagent grade dicalcium phosphate) by growing chickens.

(2) To compare the quantities of fluorine in the bones of chicks that have received 17% CDP with those that have received ARG DCP.

(3) To compare the quantities of both calcium and phosphorus in the bones of chicks that have received 17% CDP with those of chicks that have received ARG DCP.

Summary of Results . . .

- The phosphorus in CDP (Coronet Defluorinated Phosphate) is 105.93 ± 4.26% as available as that in ARG DCP (analytical reagent grade dicalcium phosphate, the theoretically perfect phosphatic mineral supplement produced for laboratory purposes, assumed to be 100% available).
- The chicks grew equally well to the age of three weeks and nine weeks, whether the source of the phosphorus in their diet was CDP or ARG DCP.
- The bone ash of the chicks receiving CDP was greater at both 3 and 9 weeks of age. At 9 weeks, the average difference, although small, *was* statistically significant.
- At both three and nine weeks of age, the ash of the tibias of the chicks contained much less fluorine than is commonly found in the bones of chicks.
- Neither at three weeks nor at nine weeks did the source of phosphorus have a significant effect on the calcium and phosphorus contents of the ash of the tibias of the chicks.

Further Information on These Experiments Sent Free Upon Request. Complete Report Available.

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Phosphorus, Total	17.0% min.	14.5% min.
Calcium, Total	34.0% min.	34.0% min.
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for the labor and service which we render to the feeder.

I predict that if we do not improve our feed retailing habits, we will disappear just as many retailers were left embalmed in the quiet of their own feed stores when motorized delivery was started. If you are going to live as a feed retailer, you will have to keep pace with the many, many changes that are taking place in this business of ours today.

Well studied, constant changes mean progress. Without progress and growth, there is retrogression and defeat—a failure to take advantage of opportunity.

Here are some of the ways progressive retailers in the Northeast have started to meet this challenge. I am also going to point out some problems whereby it makes it necessary for us as retailers to guide our efforts effectively so we may be more successful and merit more of our customers' business.

IMPORTANCE OF STORE LOCATION—Where is the successful retail feed store located? On the side track? On the main street? Or, out of town? No one answer would be 100% correct in each case.

A careful survey should be made of the area to be covered. If the farm units are large in the area, and it is decided that small items like poultry supplies, farm hardware, etc., are only going to be handled in a small way, then the out-of-town location on track, with low overhead, may be just the place.

I have in mind such an operation in New England, where each year for the last 14 years, a retail dealer has operated a profitable feed business with monthly labor costs of $1,142; truck expense, not including labor, $264 monthly and a rent cost of $70 per month. His book accounts average about $50,000 per month. In 1955 total sales were a little over $374,000. This dealer made $14,765 for the year. His cost per ton, which includes soliciting orders, making credit calls, unloading and delivery, averages about $4.51 per ton. His debt losses average well under .25% of sales. How has he done so well? Hard work, low overhead and close attention to the customers' requirements, and friendly service.

Another dealer operation was set up 10 years ago on a main street in a trading center. This store merchandises a large volume of building supplies, poultry equipment and small hardware, along with a sizeable feed tonnage, to make, likewise, a good return on his investment.

These two retail store operations are successful in the same location where others had previously failed.

CUSTOMER CONTACT AND RIGHT TYPE OF PERSONNEL—Nothing takes the place of "know-how" in the retail feed business, and one of the greatest helps to friendly relations with customers is the personal treatment accorded each one, whether at the store or at the farm. The art of pleasing is so important. Have you ever stood at your door and wondered what makes those across-the-street customers your competitor's rather than your own?

A short reference to personnel finds the following qualifications of vital importance:

1. Background.
2. Appearance.
3. Attitude and initiative.
4. Ability to work with others.
5. Pay scale and incentives.

The following statement is from a sales management survey:

"Sixty-nine per cent of the customers who do not come back to a certain store to buy time and time again, fail to come because of the indifference on the part of the owner and his clerks. Fourteen per cent never return because of failure to clear up grievances satisfactorily, 9% got a better price somewhere else, 5% have friends in other stores, 3% move away, and 1% die. That means that 83% of those customers who drifted away could have been made into good, steady, repeat customers, had the seller taken a genuine, friendly interest in the problems of the customer when he came in to buy."

KEEPING ACCURATE RECORDS—How many retailers know the cost of unloading, cost of mixing, cost of piling on the floor and the cost of delivery? How many keep track of time wasted getting started in the morning, getting started on truck routes, thus causing unnecessary overtime?

One may think that knowing these costs is not necessary because the operations are small, but I would like to emphasize that if we are to continue to succeed as retailers, it means larger operations so that our unit cost may be reduced. Whether we use fork trucks to handle our sacked feed onto delivery trucks, or load them direct from mixer or bulk bin storage, it is a "must" that we handle more tons per man per hour, which will mean less cost per ton.

Would you be surprised that we retailers, right now, have delivery costs varying from $1 to $5 per ton? These are expenses that we have to do something about. Another is storage. The more times we can turn our inventory each month, the better chance we have for a profit. The same is true of the fewer number of days we have on our books for accounts receivable.

This is the way we handle our figures for retail stores and dealers. We give them a monthly profit and loss statement and statement of assets and liabilities. The dealer, in turn, provides us with a daily form which gives his total dollar sales, total accounts receivable, cash sales, payments on account, and total paid-outs, including deposits. He keeps his own accounts receivable ledger, deposits to his account and gives us a monthly physical inventory. We pay his invoices by check after he has approved them for payment. We make a nominal monthly charge to cover the cost of this service.

We perform this type of service for a number of dealers, and they know each month just how they are doing, what it is costing them to do business, and how much money they are making. After getting set up to keep accurate records, and being able to know the definite cost involved, there is one more part of a retailer's business that needs to be studied and that is credit.

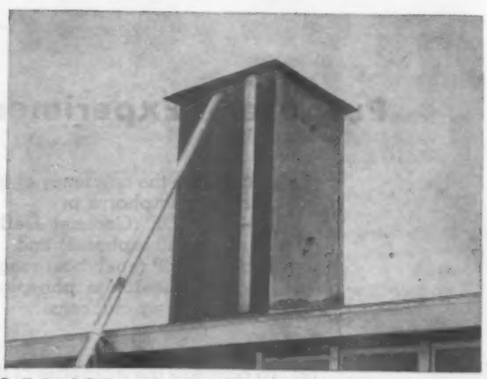
The Credit Policy

In the eagerness to secure new business, there is a very strong temptation to grant special concessions to certain customers. Frequently, these concessions take the form of lengthened credit terms, such as seasonal credit, or disregard of any

HEAT SERIOUSLY AFFECTS THE POTENCY OF MANY VITAMIN A PRODUCTS

Vitamin A, one of the key ingredients in poultry, swine, and cattle feeds, is highly susceptible to oxidation. This process is accelerated by heat. Delivering vitamin A in the potency specified by the formula is a major problem for feed manufacturers.

Now, with Micratized® vitamins, stability is assured. Nopco's most significant recent contribution to the feed industry is a complete line of truly stable vitamin A and D products. The Micratized vitamins are stabilized by an exclusive process which shields them from heat, humidity, and trace minerals.



Bulk feed delivery is geared to vitamin stability. When delivered in bulk, feed is stored in steel or wooden bins exposed to the sun. Inside temperatures often reach 125°F, putting a tremendous strain on the stability of vitamin A, because vitamin potency may deteriorate rapidly at that temperature. In such cases the success of the entire program may depend on a heat-resistant vitamin A.

Vitamin A oxidizes rapidly in storage. Feeds are not mixed, delivered, and fed, all on the same day. They are stored for varying periods on manufacturers' premises, on dealers' floors, in feed bins. Tests have shown that after only 1 month of storage at 80°F., some vitamin A dry products and oils lose half their potency in feeds.

Pelleting is frequently done at high temperatures. The pelleting process involves passing steam through the mix in a heated chamber. Recent assays of pellets fortified with vitamin A feeding oil showed severe losses of vitamin A potency (20% to 100%). Vitamin A stability in pellets is highly variable, depending on the feed formula and on the amount of heat, steam, and pressure.

Vitamin A is subject to potency loss in transit. Temperatures in closed freight cars and trucks rolling through the southern U.S. in the summertime go as high as 145°F. Transportation is a problem for manufacturers who want to deliver their feed without loss of vitamin potency enroute.

NOPCO CHEMICAL

Harrison, N.J. and Richmond, Calif.

THAT GOOD UNIFORM MEDO GREEN ALFALFA

BREMCO ALFALFA MILLS, Inc. NEW BREMEN, OHIO PHONE - 3251 & 3221

stated credit terms. At the time they are made, these special concessions may seem harmless, but in them are the seeds of much future trouble. I can assure you they are contagious and if continued, will break down the structure in any industry. It often amounts to financing them in their operations, and companies which adopt such practices will end up performing a banking function without benefit of interest or security.

I cannot stress too strongly the following basic principles of a sound credit policy:

1. Determine if the customer's credit is good before you accept it in exchange for your product.

2. Have an understanding with each customer as to when payment is expected.

3. Ask for your money when it is due.

POULTRY AND TURKEY FINANCING—Poultry and turkey financing in New England for the most part has been on a smaller scale compared to the many broiler and turkey financing programs carried on in the major broiler and turkey areas. At the present time in Maine, the broiler producer is almost solely a hired laborer. Although he furnishes some fixed capital, his remuneration is on a piece basis, regardless of the amount of profit or loss on a lot of broilers, and all management decisions and risk bearing (except part of the risk of death) are assumed by the financing agent, usually a broiler operator or feed supplier.

For independent growers, we use a dealer broiler credit plan, which asks the dealer to receive from the grower for every flock raised a chattel mortgage on the flock. Delivery receipt notes are made out for each farm delivery. The due dates on the notes given for any particular flock are established when the first note is taken and are 90 days from that date. All subsequent notes for the flock bear the same due date. All notes on any flock are due when the flock is sold.

Each dealer adds to the cost of his feed $1.50 per ton. This comprises 50¢ for insurance and $1 for financing the grower. Under this plan, each dealer establishes his mark-up on broiler feeds, including the charge for insurance and credit.

Our turkey finance plan operates similarly to our broiler plan, except that usually turkeys born in May are not paid for until after the Thanksgiving and Christmas holidays.

The chattel mortgage and notes signed by the grower and dealer are discounted by the feed manufacturer for the credit needed. Although the Vermont turkey is known in the 48 states and New England is justifiably proud of that reputation, the turkey numbers in New England are very small compared with larger areas in other parts of the country, especially in the West and Southwest.

The credit terms which are outlined by the American Feed Manufacturers Assn. in its pamphlet seem to many of us in New England as sound, and come very close to the terms on which we operate.

BULK DELIVERY—One of the greatest changes in the feed world is bulk delivery, which started on the West Coast 10 or 12 years ago.

The advantages are greater where poultry and dairy operations are carried on in large units fairly close together. This was especially true in certain areas in California and is true in the Northeast. A great deal of experimental work is still necessary to bring about many of the savings that bulk delivery may make possible.

In our operations, we now have 26 bulk trucks.

Using bulk feed on the farm means changing their bagged feed to bulk feed. Whether or not it is advisable for the feeder is a question which involves several factors, including a reduction in bulk feed costs, the volume of feed purchased, the number of different kinds of feed involved, the cost of equipment for bulk feed use and the saving of labor that bulk feed will make.

In the final analysis, the farmer, whether a poultryman or a dairyman, is going to determine whether or not bulk feed handling is here to stay. It is quite evident that the reduction in bulk feed costs is small compared to the opportunity open to the farmer, once he is equipped for volume operations.

Here are some interesting results of a survey taken of 52 broiler farms in Maine. These farms are all on bulk, with a total of 625,500 birds, an average of 12,000 birds per farm. The smallest broiler farm had 3,000 birds, and the largest broiler farm had 44,000. Thirty-three poultry farms keeping layers have changed to bulk with a total of 164,000 birds, an average of about 5,000 birds per farm. The smallest farm consisted of 800 birds and the largest had 18,000. Twenty dairy farms have been converted to bulk, with a total of 1,175 cows, or an average of 59 cows per farm.

Actual Experiences

We interviewed several of our customers, and the following illustrations tell what bulk feed has done for them:

A farmer in the Bangor area with 4,000 layers: Feels that he has cut his time by 1½ hours per day. He was formerly a car buyer and hauled his feed alone. With the bulk set-up, his wife can feed the birds when necessary. In addition, he plans to build a new house for 2,000 birds, construction of which he plans to do in his spare time.

A lady farmer from the Bangor area with 3,000 layers and one hired man: Since going on bulk, the hired man has had sufficient time to do the necessary maintenance and repairs on the farm which formerly had to be done by outside help.

Since going on bulk and automatic feeders, a farmer in the Rockland area, who originally had 6,000 birds, is increasing to 10,000 layers and 5,000 broilers. He figures that the total time spent on feeding birds is approximately 10 minutes a day. The time saved on this operation allows him to spend one-half day each day on his art work of landscape painting. The entire labor consists of the farmer, his wife, son and one hired man.

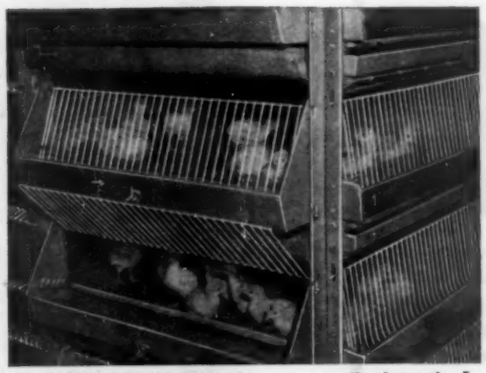
Another farmer in the Rockland area has 6,000 layers and feels that he saves one hour or better per day and plans to increase his operation to 8,000 birds without additional labor.

And yet another farmer in the

(Continued on page 25)

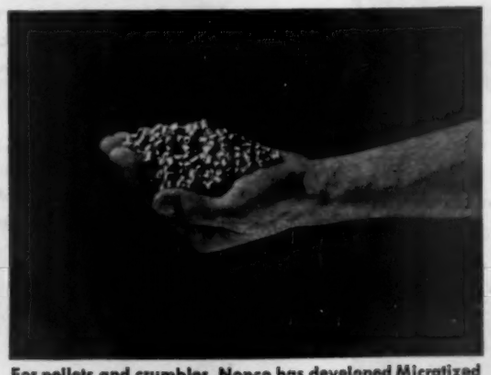
SPECIAL MICRATIZED® VITAMIN A PRODUCT IS AVAILABLE

Micratized Vitamin A is a key factor in Nopco's Nopcay® Livestock Feeding Supplement. Stable, potent vitamin A has been proved essential for profitable cattle gains. Nopcay assures feeders of adequate amounts of vitamin A in spite of seasonal high temperatures which destroy the value of other vitamin supplements. For thriftier cattle and larger calf crops, feed Nopcay Livestock Feeding Supplement.



Feeding tests in the laboratory are equally dramatic. In one university's test on turkeys, the control group birds fed no vitamin A and those fed vitamin A in the form of fish liver oil which had deteriorated in the feed all died within 4 weeks—conclusive evidence of the key role of vitamin A in poultry diets. The group fed Micratized Vitamin A showed normal survival and made satisfactory growth.

Every test conducted by independent agencies has shown Micratized Vitamin A to be uniquely stable under exposure to heat. A recent university report showed that Micratized Vitamin A, mixed with a feed containing trace minerals, lost only 4.8% of its potency after 30 days' storage at 98.6°F. In that same test, cod-liver oil lost 40% of its potency, and a stabilized dry fat powder 32%.



For pellets and crumbles, Nopco has developed Micratized Vitamin A, Type L. This product survives the pelleting process in spite of extremes in heat, moisture and pressure. At the same time, Type L, like other Micratized vitamins, is readily absorbed from the digestive tract. You can depend on Micratized vitamins to deliver, without expensive overages, the potency specified by the formula.

Get acquainted with Nopco's Micratized vitamins. Send for the Nopco Nutrition Guide.

COMPANY

NOPCO

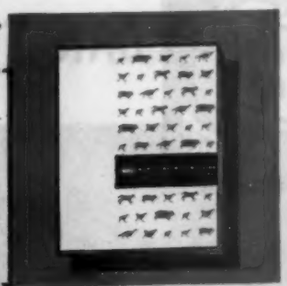
NOPCO CHEMICAL CO., 100 Front St., Harrison, N.J.

Please send me the Nopco Nutrition Guide.

*Name*_____

*Address*_____

*City*_____ *Zone*____ *State*_____



Basic producers of Micratized® Vitamins A and D, niacin, calcium pantothenate, choline chloride, and other products.

Hilltop Laboratories 710 Washington Ave. N. Minneapolis 1, Minn

Double Your Tonnage!

Triple Your Profits! WITH

W. E. Conard

This is one of a series of ads featuring good businessmen who have doubled their tonnage with the Honegger Program.

Exclusive territory franchises still available in some areas. Some aggressive dealer will double his tonnage in your area with Honeggers' Big "H" Feed Franchise. It might as well be you!

Watch for a series of Ads featuring Good Businessmen who have doubled their tonnage with the Honegger Program.

Conard Feed Service
SALEM, IOWA
BOX 5 PHONE 58

Honeggers' & Co.
Fairbury, Illinois
Attention: Mr. L. S. Rolf

Dear Mr. Rolf:

As a Honegger dealer we have something more to offer than just good feed. It's the proven Honegger feeding programs that have meant so much to us here in Iowa.

Your complete hog program has done much to help us build our tonnage to where it is today. Especially in the last few months, with lower hog prices, a sound program is the only way our customers are able to make money.

Yes, we have doubled our tonnage on the Honegger program, and are pleased about it. New developments are continually being made in the feed industry, with Honeggers in the lead. We are very happy to represent you in this area.

Sincerely yours,
CONARD'S FEED SERVICE
W. E. Conard
W. E. Conard

HONEGGERS' BIG H FEEDS CAN TRIPLE YOUR PROFITS!

THE HONEGGER PROGRAM

WHAT OTHERS HAVE DONE...YOU CAN DO ALSO; WITH HONEGGERS' COMPLETE PROGRAM

HONEGGER FEEDS

Honeggers' offer a complete line of feeds and complete feeding programs that help increase your tonnage. The Honegger line is a "profit-package" backed by continuous research and a rapidly increasing number of enthusiastic users.

HONEGGERS' "EGG FACTORY"

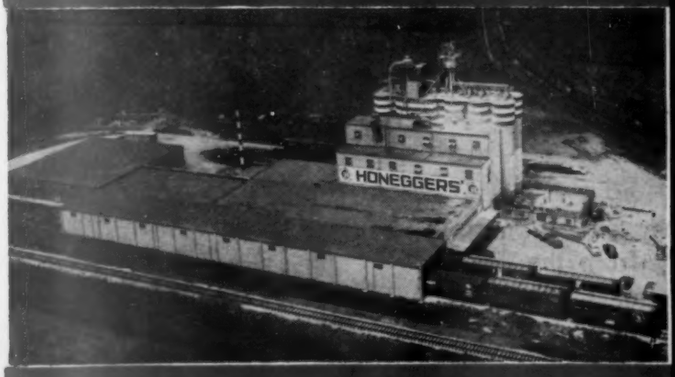
Each dealer receives a franchise to sell Honeggers' exclusive "Egg Factory" program in his area. This is a plan featuring the nationally famous Honegger Leghorn, the Honegger Poultry House and other Farm Buildings and Honeggers' feeds for all livestock and poultry. What a natural for increasing tonnage and profits! Remember, in only a year's time, 500 birds will eat a carload of feed.

HONEGGERS' LIVESTOCK AND POULTRY EQUIPMENT

With Honeggers' wide variety of dependable livestock and poultry equipment, and accompanying farm supplies, Honegger dealers have a source of supply which features unequalled dealer service. Your customers will come to depend on you as their one-stop dealer for all poultry and livestock programs.

HONEGGER FARM BUILDINGS

Honeggers' line of pre-built farm buildings are an extra profit plus. There's no additional investment on your part . . . and what a perfect tie-in for your livestock and poultry feed business.



Honeggers' modern feed mill near Fairbury, Illinois, features electronic controls for speed and accuracy, with "push-button" ingredient selection and all bulk handling throughout the plant for top efficiency and economy.

The 600 acre Honegger Research Farm, where practical feeding, management and disease control practices are developed and demonstrated. Dealers find that a tour of Honeggers' by customer prospects really helps sell them.

WRITE, PHONE OR WIRE COLLECT FOR COMPLETE DETAILS

HONEGGER Leghorns

HONEGGERS'

FEED & MILLING DIV., FAIRBURY, ILL. • BREEDER HATCHERY DIV., FORREST, ILL.

BIG H FEEDS

For making better feeds

LIME CREST

TRACE-MINERAL PRE-MIXES

(PATENT APPLIED FOR)

Behind all Lime Crest Trace-Mineral Pre-Mixes stands a record of providing the best possible products with true economy and convenience for the feed manufacturer. Lime Crest pioneered in the use of compatible ingredients in trace-mineral pre-mixes. Its exclusive blending process assures uniformity of distribution of the vital trace elements.

Important, too, is Lime Crest leadership in trace mineral research . . . research that produced a better blending process and led to the use of trace mineral compounds that are more compatible with fat-soluble vitamins.

Because quality control is a fetish at Lime Crest, you can depend on accuracy and uniformity of all our formulations. Lime Crest's facilities and skills are your assurance of receiving the most advanced products to help you produce better feeds.

Just off the Press:

Write for a free reprint of the chapter on Energy Values of Feedstuffs for Poultry from the 1955 edition of The Scientific Feeding of Chickens by Dr. Harry W. Titus.

Lime Crest

LIME CREST PRODUCTS

are made by Limestone Products Corporation of America

Dept A-5 Newton, N.J.

World's Largest Producer of Crystalline Calcite Products

Makers of LIME CREST CALCITE CRYSTALS—the 3-in-1 calcium supplement for poultry; LITTER-KEPE—the ideal conditioner for poultry litter; Non-Skid BARN CALCITE—for safe, non-skid barn floors.

In Canada: The Ash Chemical Company, 410 St. Nicholas St., Montreal 1, P. Q.

Rockland area with 12,000 layers was able to cut his hired crew by one man so that the entire work is now handled by two men and one woman.

This survey indicates to us that bulk feeds are here to stay. Not a single bulk customer has ever indicated that he would like to go back to handling bags. We can summarize the value of bulk feeds as follows:

1. It makes feeding easier so that older people, young people and women can take part in caring for the flock.

2. It provides extra space that can be used to increase the size of the flock.

3. It saves labor which allows poultrymen more time for other activities.

4. It makes it possible for the farmer to increase the size of his flock without increasing labor.

5. If the farmer wants to keep the same size flock, it makes it possible for him to reduce the amount of his labor.

6. It gives the farmer more time for hobbies.

7. Above all, bulk feed makes farm life more enjoyable to an ever-increasing number of farm people who deserve all of the advantages which bulk feeds bring to the farm home.

Objections

On the other hand, here are some of the most common objections we hear to bulk feeding—and our answers to these problems:

1. Cost of building bulk feed bins, possible removal of partitions, remodeling feed rooms to increase floor space, etc.—(Amortize in one year).

2. Difficulty in constructing feed bins that will always feed down and never retain any old feed. (Feed bins that do not clog are now available).

3. Difficulty in maintaining check on feed consumption which is possible with 100-lb. bags.—(Buckets rather than bags may be used as the units of measurement).

4. Difficulty in checking purchase weight of feed on truck.—(Use an automatic scale slip).

5. Difficulty in checking the amount of feed which is delivered to each house or bin.—(Truck has compartments; with experience the operator can estimate very closely).

Delivery Costs

You might be interested in delivery by a bulk truck carrying 10 to 12 tons of bulk by one of our dealers. Although these figures are only for a two-month period, they do show some of the possibilities when a truck can be operated at near capacity. One man delivered 367 tons at a total cost of slightly less than $2 per ton. We have other figures that vary from $2 to $3 per ton, which include all costs of the truck and labor involved. A great deal depends on the size of the area to be covered.

As a service to our dealers in New England, we set up nine bulk distributing points and will make deliveries for our dealers up to 50 miles from the bulk station at a charge of $3 per ton. We are also using air tailgate delivery units where tonnage up to 300 to 400 tons per month is anticipated.

We anticipate that there will be a decided increase in the amount of bulk feed used because of the potential savings of labor on the farm and the greatly increased size of our poultry flocks and dairy farms in our area. Bulk feed on the dairy farm is right in step with bulk milk handling; the latter started on the West Coast and is now rapidly coming into ap-

INTRODUCING . . . .

B-M-K CORPORATION

A Corporation to License Producers of

"HYDROLYZED POULTRY FEATHERS"

85/90% PROTEIN *PLUS* GROWTH FACTORS

Fits into NEW HIGH PROTEIN energy poultry rations!

Producers of Hydrolyzed Poultry Feathers operating under license from B-M-K- Corporation must meet the tentative definition as approved by The American Feed Control Officials.

Check with your local feeding regulations, for proper use in feeds.

THE FOLLOWING PRODUCERS ARE LICENSED TO MANUFACTURE HYDROLYZED POULTRY FEATHERS . . .

- **IDEAL BY-PRODUCTS** • Div. of Wilson & Toomer Co., Jacksonville, Florida
- **J. D. JEWELL, INC.** • Gainesville, Georgia
- **MARDEL BY-PRODUCTS CORP.** • Salisbury, Maryland
- **POULTRY BY-PRODUCTS CO.** • Canton, Georgia
- **SMITH-ROWLAND CO.** • Div. of Smith-Douglass Co., Inc., Norfolk, Virginia

Contact the producer nearest your consuming point

B-M-K CORPORATION

P. O. BOX 1067 • OWNERS OF PATENT NUMBER 2,702,245 • SALISBURY, MD.

LOOK FOR THIS

for high-level antibiotic feeds

EFFECTIVENESS

BACIFERM contains the effective antibiotic bacitracin

The effectiveness of BACIFERM is unexcelled, even by more costly antibiotics, because it has the right *selective activity*. On farm after farm, BACIFERM has effectively stopped secondary invaders in poultry and black scours in swine by exhibiting a high degree of *selectivity* in controlling harmful organisms such as Streptococcus, Micrococcus, and Vibrio. While controlling these harmful bacteria, BACIFERM also promotes the growth of *E. coli* and *A. aerogenes*, intestinal bacteria which produce vitamins and other growth factors. BACIFERM stimulates appetites—keeps animals eating during disease or other stress periods. BACIFERM, a bacitracin antibiotic supplement, gets more poultry and swine to market faster, by hastening recovery and reducing mortality.

BACIFE

TRIO

EXTRA VALUE

provides bonus vitamins and nutrients

Every BACIFERM antibiotic supplement is a whole fermentation product. Each contains *selectively-active* bacitracin plus naturally produced B-vitamins, high protein, vitamin K, and unidentified growth factors. During stress periods, these extra vitamins in BACIFERM may be as important to poultry and swine as the high-level antibiotic. At no extra cost, you get these typical quantities of bonus vitamins when you fortify a ton of feed with BACIFERM at a 200-gram level of antibiotic:

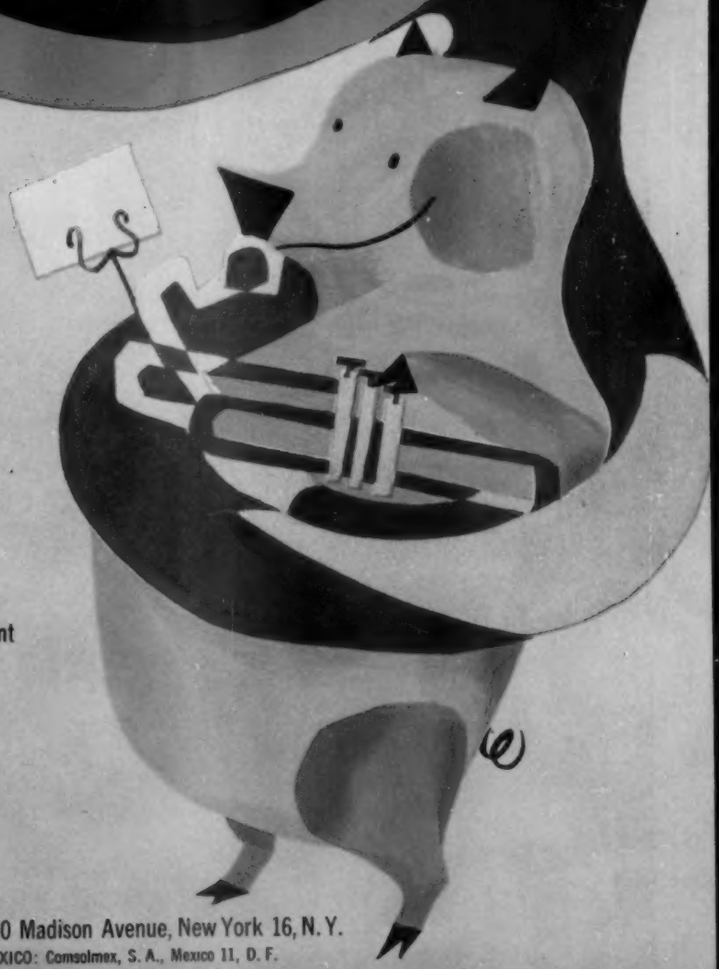
Riboflavin	1,160.0 mg.	Pantothenic Acid	3,480.0 mg.
Vitamin B_{12}	1.2 mg.	Niacin	2,000.0 mg.
Choline	18,640.0 mg.	Para Amino Benzoic Acid	192.0 mg.
Folic Acid	208.0 mg.	Vitamin K	1,120.0 mg.

plus unidentified growth factors
plus protein (28%)

ECONOMY

BACIFERM costs 25% less!

On a gram-for-gram basis, tetracycline-type antibiotics used at high levels may produce results equal to bacitracin. But only BACIFERM gives maximum effectiveness and cuts fortification costs at least 25%. That means you save $3 to $6 per ton of high-level feed when you choose a BACIFERM bacitracin antibiotic supplement.



Combination Antibiotic Supplement Available:
Ask for BACIFERM®-PB, a BACIFERM supplement combining bacitracin and penicillin.

Specify **BACIFERM**
for High-Level Feeding at Low-Level Cost.

For further information, write...

Animal Nutrition Department · COMMERCIAL SOLVENTS CORPORATION · 260 Madison Avenue, New York 16, N.Y.
IN CANADA: Reliance Chemicals, Ltd., Montreal, Que. · IN MEXICO: Comsolmex, S. A., Mexico 11, D. F.

RM®

CSC BACITRACIN ANTIBIOTIC SUPPLEMENTS

STEAMED
FEEDING ROLLED OATS
- PULVERIZED WHITE OATS
- FEEDING OAT FLOUR
- FEEDING OAT MEAL
- HY-PROTEIN OAT FEED (11%)
- REGROUND OAT MILL BY-PRODUCT (3½%)
- FEEDING STEEL-CUT OR WHOLE OAT GROATS

SHIPPED IN STRAIGHT OR MIXED CARS; FOR LATEST QUOTATIONS WRITE, WIRE, TELETYPE MP 545 OR PHONE FE 2-4341

General Mills, Inc.
PURITY OATS OPERATION
BOX 1188, 1201 JACKSON ST. N. E.
MINNEAPOLIS 1, MINN.

proximately the entire dairy areas of New England.

With an expected population in the next 10 years of 180 to 185 million people to feed, there is certainly no reason why people in the feed industry should not be optimistic about the future, filled with enthusiasm to do a better job and do it more economically. The task of planning for the future is plain, hard work and lots of it. The rewards will be great if we think clearly and act with courage. As is so often quoted—"The future belongs to those who prepare for it."

SELLS BUSINESSES

EDDYVILLE, IOWA—James G. Steel, who has operated a mill and feed business here since 1942, has sold the business to his employee of the past 12 years, Orville Maloy. At the same time, Mr. Steel sold his feed business at Albia to his son, William Steel, who has operated the business since it was started.

stacks solidly! easier to grip!
Thousands of tiny interlocking grooves are pressed into the tough kraft outer-wall of the new Cromwell STAK-GRIP bag . . . by an embossing process originated by Cromwell. Result: built-in two-way slip-resistance with no reduction in strength!
In over a year of actual use, the Cromwell STAK-GRIP bag has proved these outstanding advantages:
1 cuts breakage losses due to slippage.
2 increases safety because bags stack solidly.
3 helps sales because both dealers and farmers like the flexible, easy-to-handle surface and the extra-brilliant printing.
brightest, strongest printing you've ever seen on a multi-wall bag!
Printing before embossing gives a 3-dimensional effect to the printing, adds amazing brilliance and intensity, and puts a real merchandising wallop behind your brand.
For a free sample and complete information, write on your business letterhead to Mr. O. N. Johnson.
for the latest and best in feed bags
stop bag slippage with
CROMWELL
STAK-GRIP® bags
Cromwell
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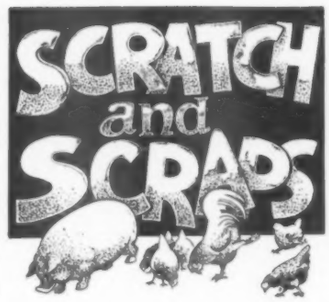
Chicago 32, Illinois



To the Friends Hostel at Jordans, England, came very late one night a young couple asking for accommodations. The caretaker first reproved them for disturbing the repose of her household. Then, remembering her responsibility for Quaker hospitality, she asked, "Are you friends?" To which the man replied reassuringly, "Oh, no, we're married."

◆ ◆ ◆

The young lady, having recently acquired an interest in botany, asked of a Southern gentleman, "What sort of plant is the Virginia creeper?"

"It is not a plant," he replied sadly. "It's a railroad."

◆ ◆ ◆

The lion awoke one morning feeling uncommonly well. He stalked down the jungle trail until he came to a hyena. "Can you tell me," he asked, "who is King of the Jungle?" The hyena bowed. "Sire," he said, "you are the king."

Then the lion came to a leopard and repeated his question. The leopard, too, gave assurance that the lion was King of the Jungle.

Finally, the lion came to an elephant, standing in the shade of a tree. Again he asked, "Who is King of the Jungle?" Without replying, the elephant picked up the lion and threw him against the tree trunk. Then, before the lion could catch his breath, the elephant picked him up and threw him again. This time the lion wriggled around behind the tree and shouted, "All right, all right—you don't have to get so mad, just because you don't know the answer!"

◆ ◆ ◆

As Grandma Jones approached the century mark, her friends made plans for a gala celebration. They asked what she wanted for a present, and promised to make her wish come true, no matter what it was. But there was nothing Grandma wanted—except to sit.

"How about a ride in an airplane," suggested one relative. "I could arrange the flight."

"I ain't a-goin' to ride in no flyin' machine," said the determined old lady who had crossed the plains in a covered wagon. "I'll just sit here and watch the television, like the Lord intended I should."

◆ ◆ ◆

At an agent's booking office, a magician was trying to sell his act. "I've got the greatest act in the world," he declared. "I pull 200 lighted cigars from nowhere, puff on each one of them and then swallow the entire 200." The amazed agent gasped, "You swallow 200 lighted cigars?" "How do you manage that?" The magician smiled blandly. "Very simple," he replied, "I have connections in Cuba and get 'em wholesale."

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DRIED whey is a profit booster in broiler rations — for the company that makes them and for the grower who feeds them. This is shown by results of eight recent college feeding trials.

On these experiments, 2½% to 3% dried whey was added to otherwise well-fortified rations. Whey-fed birds gained an average of 0.39 lb. more per bird in 10-week periods and delivered an average of $51.94 more income over feed cost per thousand broilers.

Typical results are shown by the tables at right. Note in the first table how feed conversion improved from 2.68 to 2.60 when 2½% dried whey was added; how weights increased 0.24 lb. per bird; and how profits jumped from $273.75 per thousand broilers to $306.93.

What's more, DRIED WHEY increased income $20.44 per thousand birds when the basal ration already was fortified with fish solubles.

Whey gives these extra benefits because it supplies a powerful, unidentified nutrient. This factor works with other ingredients to speed growth, improve feed efficiency and increase appetite appeal of the ration.

Write for complete details on these college feeding results and for full information on Peebles' spray-dried whey. It's a high-quality product — uniform from season to season and available the year around

TREATMENT	AVE. 8½ WK. WT. (LBS.)	FEED GAIN
None	2.36	2.68
2.5% Dried Whey	2.60	2.60
2% Fish Solubles	2.59	2.59
2.5% DW & 2% FS	2.77	2.56

Dried whey at 2½% level improves feed conversion and profit over feed cost, with or without other unidentified factor carriers in the ration.

EXTRA FEEDING BENEFITS FROM 2½% DRIED WHEY

TREATMENT	INCOME	FEED COST	INCOME OVER FEED COST
Basal	$590.00	$316.25	$273.75
2.5% DW	650.00	343.07	306.93
2.5% FS	647.50	337.08	310.42
2.5% DW & 2.5% FS	692.50	361.64	330.86

Per 1,000 birds

Dried whey at 3% level, either alone or in combination with fish factor carrier, increases profit over feed cost.

TREATMENT	AVE. 10 WK. WT (LBS.)	FEED GAIN
None	2.216	3.13
3% Dried Whey	2.795	2.88
3% Fish Solubles	2.812	2.79
3% DW & 3% FS	2.993	2.81

Cost of basal ration figured at $5.00 cwt. Dried whey calculated on a corn replacement basis; fish solubles and distillers dried solubles on replacement of some corn and some soybean oil meal. Broiler price at 25¢ per pound.

EXTRA FEEDING BENEFITS FROM 3% DRIED WHEY

TREATMENT	INCOME	FEED COST	INCOME OVER FEED COST
Basal	$554.00	$346.80	$207.20
3% DW	698.75	409.75	289.00
3% FS	703.00	395.44	307.56
3% DW & 3% FS	748.25	431.43	316.82

Per 1,000 birds

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Corn Disappearance for Half Year Tops Last Season's Rate

WASHINGTON—Disappearance of corn October through March this season amounted to 1,595 million bushels, 127 million more than for the same months last season, but with this exception, the smallest for the six-month period since 1947-48. Stocks of corn on April 1 were the largest of record at 2,291 million bushels.

In its quarterly corn market summary, the U.S. Department of Agriculture reports that corn used for feed October-March amounted to 1,403 million or 111 million more than for the first half of 1954-55.

Corn used for feed, dry milling and farm household use the first six months amounted to 1,450 million bushels, as against 1,339 million for the comparable period last season.

Exports of corn the first two quarters this season, USDA reports, amounted to 56 million bushels, compared with 46 million the same period last season and 61 million the five-year (1949-54) average.

Wet milling of corn totaled 71 million bushels October-March this season as against 70 million for the same months last season. The use of corn for alcohol the first half of the season amounted to 16.2 million bushels compared with 11.8 million in the same period a year earlier.

Stocks Largest of Record

Stocks of corn in all positions on April 1, at 2,291 million bushels, were the largest of record, 7% more than the 2,133 million a year ago, and 47% above average. Farm stocks of corn totaled 1,477 million bushels, 4% more than the 1,426 million on April 1, 1955, and 13% above average.

Terminal stocks at 80 million bushels were 23.7 million more than last year and more than double the April 1 average. Stocks at interior mills, elevators and warehouses, totaling 200 million bushels, were the largest of record and compare with 138 million last year.

The Commodity Credit Corp. holdings in its own bins amounted to 534 million bushels, 23 million more than on April 1 a year ago. Of the total stocks, about one half were under price support or owned by CCC, according to the USDA report.

Acreage To Be Down

The prospective corn acreage for 1956 will be 78.7 million acres, the smallest in 31 years of record, if farmers carry out their March 1 planting intentions. This would be 3.5% below the 81.6 million acres planted last year and 7% less than average. The intended decline in planted acreage is quite uniform by areas. If the indicated acreage is planted and average yields are realized, the production of corn would be approximately 3 billion bushels, or about 5% less than last year's crop of 3.2 billion bushels, USDA reports.

The minimum price support rates for 1956-crop corn will be based on $1.50 bu., or not less than 82½% of the Oct. 1, 1956, corn parity price. Price support rates in the noncommercial producing area will be 75% of the commercial area support rates. Corn in the commercial areas which is not produced under acreage allotment controls will be placed at a minimum of $1.25 bu., but not less than 70% of parity at the beginning of the marketing year. The support level for the 1955-crop corn was $1.58 bu., which was 87% of parity.

More Under Support

Through March 15 this year 341 million bushels of 1955-crop corn had been placed under price support. This is more than double the 158 million bushels of 1954-crop corn under support at the same time a year ago and compares with 332 million of the 1953-crop on March 15, 1954. The final date for putting corn under price support is May 31.

Sales of corn by the CCC October through March amounted to 64.6 million bushels. This compares with 63.3 million bushels sold during the comparable period a year ago. Of the sales this season, 32.1 million bushels were for overseas export, 31.2 million domestic sales, and 1.3 million delivered under the Emergency Feed Program.

Prices Advance

USDA reports that corn prices at the principal terminal markets advanced 15¢ during April to an average of $1.51 bu. This compares with $1.47 bu. in April 1955. Prices received by farmers dropped rather sharply in November to $1.09 bu., but since then have advanced steadily and at the middle of March averaged $1.20 bu.

The hog-corn feeding ratio, based on Chicago prices, averaged 10.4 the first three weeks of April this year compared with 9.9 in March and 11.6 in April 1955.

Poultry Congress Set

SAN FRANCISCO—The Western Poultry Congress of the Poultry & Egg National Board has been scheduled for June 19-21 at the St. Claire Hotel, San Jose, Cal., it has been announced by Ray B. Schwartz, western PENB manager. Dr. James M. Gwin, PENB general manager, will be keynote speaker at a special breakfast during the convention which will also feature bestowing of the national Good Egg award. A meeting of the PENB Western Advisory Committee will be presided over by Freda Gandler, Seattle (Wash.) Hatchery.

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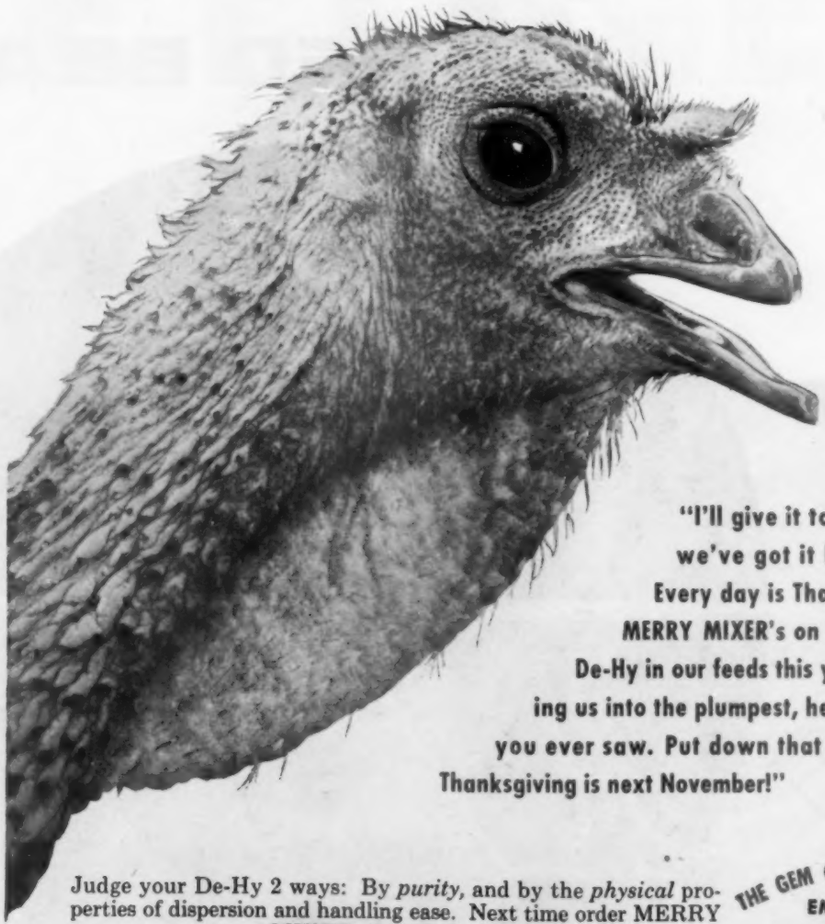

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Antioxidants—Present Status

By Dr. J. R. Couch
Texas A & M College

EDITOR'S NOTE: When the Food and Drug Administration recommended recently that the use of the antioxidant DPPD in poultry feeds be halted, many feed manufacturers were left with questions in their minds regarding antioxidants in feeds. In the accompanying article, Dr. J. R. Couch, departments of poultry husbandry and biochemistry and nutrition at Texas A&M College, presents a summary of the current situation in regard to the use of antioxidants. His remarks deal with the present status of antioxidants for feed trade use and with past and current research with some of the antioxidants.

v v

Antioxidants Introduced to the Feed Trade—Antioxidants were first introduced to the feed trade at the annual meeting of the American Feed Manufacturers Assn. on May 5-7, 1954, by Dr. E. P. Singsen, head of the poultry department, University of Connecticut. Dr. Singsen was reporting upon a project which had been sponsored by the American Feed Manufacturers Assn. and which was initiated in October, 1951. These studies were concerned with the prevention of crazy chick disease or field encephalomalacia.

As a result of these studies, Dr. Singsen showed that the encephalomalacia could be prevented by vitamin E and stated that diphenyl-paraphenylenediamine (DPPD) was highly effective in preventing the disease. It was stated further in this report that 12 other antioxidants had been tested. Some of these showed no protective value while others protected partially and still others appeared to protect in full against the encephalomalacia.

It was also stated in this report that butylated hydroxyanisole was ineffective in preventing encephalomalacia. Butylated hydroxyanisole had been widely used to stabilize fat prior to mixing in feeds.

Within a period of three to four months following Dr. Singsen's report, DPPD had been accepted for use in poultry feeds only, and by the end of 1954 the compound was being widely used as an antioxidant in manufactured feeds.

It should be pointed out that prior to this time 1, 2-dihydro-2, 2, 4-trimethyly-6-ethoxyquinoline (Santoquin) had been accepted for use as an antioxidant in the stabilization of carotenoids in alfalfa. It has been reported that Santoquin is about 60% effective in preventing carotene losses in alfalfa.

(At present Santoquin may be used only in products to be fed to poultry.)

An article appeared on the front page of the April 14, 1956, issue of Feedstuffs to the effect that the Food and Drug Administration had recommended the withdrawal of DPPD from the feed trade channels. It was stated in this communication that the recommendation did not involve processed stocks of poultry feeds on hand and in feed industry channels. It was further stated that DPPD did not indicate any harmful effect when used in poultry feeds, but that the compound produced a toxic effect when fed to pregnant rats and for this reason it was recommended that the distribution to the feed industry for use in poultry feeds be stopped and that stocks in distribution channels be recalled by the manufacturer.

The latter mentioned announcement has caused much concern among manufacturers in the feed industry. The first inclination by some was to discontinue the use of antioxidants until the situation had become stabilized with regard to the acceptance or rejection of an antioxidant for use in feeds. The discontinuance of the use of DPPD caused a great deal of anxiety. Registrations had to be changed in many states. The nutritionist and the feed manufacturer were undecided as to whether another antioxidant should be substituted for DPPD or whether the antioxidant should simply be eliminated from the feed until the situation became more stabilized.

It should be pointed out that the reports from the University of Connecticut have shown that BHT was equivalent to DPPD with regard to preventing the occurrence of crazy chick disease or field encephalomalacia. Butylated hydroxytoluene was also shown to be equally as effective as DPPD in promoting the storage of vitamin A in the liver in two experiments which were reported by the Connecticut workers before the Informal Poultry Nutrition Conference in Atlantic City on April 15, 1956.

Acceptance of Antioxidants by the Association of American Feed Control Officials and Food and Drug Administration — The Association of American Feed Control Officials accepted butylated hydroxytoluene as well as a number of other antioxidants at the annual meeting in Washington on October 12-14, 1955. The writer received word in the form of a personal communication from the Food and Drug Administration on April 27, 1956, to the effect that butylated hydroxyanisole and butylated hydroxytoluene are acceptable by the FDA for use in foods. It was stated further in the letter that the concentration for use in foods varied from 0.01 to 0.02%.

From the above, it would appear to the writer that the feed manufacturer, the poultry producer and the livestock producer should have no hesitation in accepting the two above mentioned antioxidants for use in feeds. It was pointed out above that butylated hydroxyanisole is ineffective in the prevention of field encephalomalacia or crazy chick disease; and, therefore, the usual usage would be limited to adding this anti-

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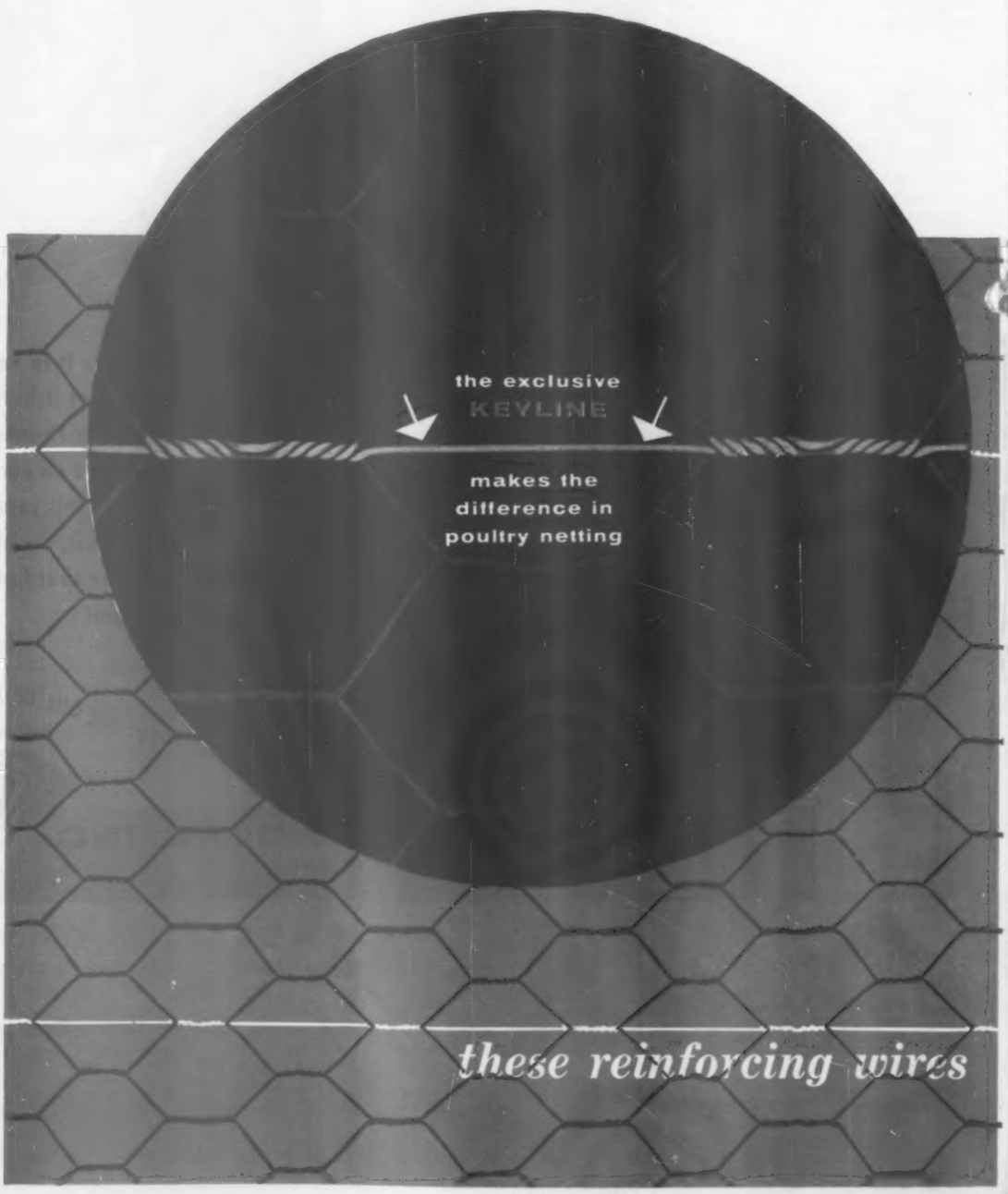

oxidant to fats which could later be used in feeds.

Antioxidants of Choice — BHT would now appear to be the antioxidant of choice for use as a direct additive to manufactured feeds. This antioxidant has been shown to be effective for the prevention of field encephalomalacia or crazy chick disease and for increasing the storage of vitamin A in the livers of chicks. The actual manner in which the latter functions is to a large extent an unanswered question. Vitamin A or provitamin A may be destroyed by oxidation during the storage of an ingredient or nutrient prior to mixing in the feed, may be destroyed in the manufactured feed prior to being consumed by the animal and may also be destroyed during the early processes of digestion. It seems quite possible to assume that the antioxidant BHT is exerting the protective effect against the destruction of vitamin A under the three conditions discussed above and may possibly be exerting the maximum effect during the early processes of digestion. It is quite evident from the data obtained at the University of Connecticut that BHT increases the storage of vitamin A in the liver when used at the level of 0.0125% or ¼ lb. per ton.

Antioxidants Perform Essential Role in Manufactured Feeds — It would appear to the writer to be a backward step if antioxidants are removed from manufactured feeds. There is little reason for such removal when the many beneficial effects of the antioxidant are considered. It is a well established fact that antioxidants are organic compounds which are used to prevent the autoxidation of petroleum products, fats, oils, rubber and the many other inorganic materials. Peroxides are formed first during the process of oxidation. This results in the loss of odor and flavor and leads to the formation of aldehydes, ketones and acids, which are detected under practical conditions through rancidity.

Fat soluble vitamins, provitamin A and hydroxylated carotenes may be destroyed during the process of oxidation of the feeds. The initiation of oxidation is accelerated by metallic ions such as copper, iron and manganese, by high temperatures, light and high humidity.

It has been the writer's experience that one of the best times to study the destruction of vitamin A and the effectiveness of an antioxidant in preventing such a destruction is during the late spring and early summer in Texas. Conditions are apparently optimum with regard to temperature and humidity during May and early June for the rapid destruction of vitamin A if the vitamin is not mixed in the feed in the stabilized form.

It has been reported from this laboratory (Poultry Science, volume 34, pages 603-608) that all of the vitamin A was destroyed when fortified fish oil was used as the source of the vitamin and when the feed was mixed and stored four weeks prior to feeding. There was apparently a 100% destruction of the vitamin during the storage period since all chicks fed on the feed succumbed to vitamin A deficiency. This experiment was repeated the following year with turkey poults as the experimental animals and with a level of 4,000 international units of vitamin A per pound of feed. Feed was again stored one month prior to feeding. All turkey poults fed this feed had died by the end of the fourth week of the experimental period, thus indicating all the vitamin A had also been destroyed by oxidation.

The use of antioxidants, such as BHT, has been shown by a number of workers to prevent the onset of oxidation. The use of this antioxidant delays the destruction of fats, fat soluble vitamins and other nutrients which are liable to destruction by oxidation. The antioxidant is more useful if all efforts are exercised to eliminate predisposing factors of oxidation such as the exposure of the feed ingredient or nutrient to high temperatures, high humidity, undue exposure to light and to metallic ions such as copper, iron and manganese.

Antioxidants and Pigmentation — There are a number of reports to the effect that DPPD improved the pigmentation of broilers when added to a diet at the ¼ lb. per ton level. Dr. J. H. Quisenberry, head of the department of poultry husbandry, Texas A&M College, College Station, conducted an experiment in the spring of 1955 which failed to confirm these reports. Dr. L. D. Matterson, who at that time was on sabbatical leave from the University of Connecticut, worked with Dr. Quisenberry on this experiment.

It was evident from the results obtained that not only did DPPD not assist in improving pigmentation but actually had a slight detrimental effect. As pointed out above, DPPD is no longer acceptable for use in poultry feeds. It should be pointed out that research work should be initiated whereby the effect of BHT on pigmentation will be determined.

Antioxidants and Hatchability — The effect of the antioxidant DPPD

Dr. George F. Godfrey

APPOINTED—Dr. George F. Godfrey has been appointed executive director of Honegger Hatchery operations at Forrest, Ill., it has been announced by Sam R. Honegger, president of Honeggers' & Co. Dr. Godfrey is replacing A. P. Loomis who is retiring June 30 after 14 years of service with the company. One of the nation's leading geneticists and poultry authorities, Dr. Godfrey came to the Honegger organization in June, 1955, to head its poultry research work. He had been on the staff at Oklahoma A&M College.

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on turkey hatchability has been studied by Dr. Jensen and co-workers at Washington State College (Proceedings of the Society for Experimental Biology and Medicine 91: 386-388, 1956). These workers accentuated a deficiency of vitamin E in turkey breeders by feeding 2% Pollock liver oil. Such deficiency of this fat soluble vitamin was counteracted by adding either alpha tocopheryl acetate or DPPD to the diet.

An experiment is in progress in the department of poultry husbandry, Texas A&M College, at the present time whereby the effect of BHT on turkey hatchability will be determined. This experiment will be terminated after a seven month period and the data will be summarized. This is called to the attention of the reader simply to point out that most, if not all, of the experiments which were conducted earlier with DPPD have either been completed or are in progress with the antioxidant BHT.

Recommendations Concerning Use of Antioxidants—After a careful review of published reports (popular articles and scientific papers), the writer recommends that feed manufacturers continue to use an antioxidant in manufactured feeds for the purpose of protecting fats, fat soluble vitamins and other nutrients which are liable to oxidation against possible destruction. It would appear from the data at hand that the two antioxidants most generally acceptable to the trade are BHT (butylated hydroxytoluene) and BHA (butylated hydroxyanisole).

Butylated hydroxytoluene would be used as a direct feed additive. It is imperative that a feed additive have free flowing characteristics. Feed manufacturers should examine the product at hand for such characteristics. Butylated hydroxyanisole is used as an antioxidant in fats which are later used as ingredients in manufactured feeds.

Both of these antioxidants have been accepted for use in human food by the Food and Drug Administration and by the Association of American Feed Control Officials. If such antioxidants have been accepted for use in human foods, the research worker and the nutritionist do not have the problem of determining the possible carryover of BHA and BHT to the carcass of the animal fed on feeds containing these antioxidants and the possible deleterious effect of these compounds when such meat is consumed by the human. The fact that these antioxidants have been accepted for use in foods makes the problem of carryover into the animal carcass of little consequence.

It is the opinion of the writer that feed manufacturers should be required to guarantee the level of the antioxidant which is to be added to the feed. Such an opinion is in compliance with the regulations of the Association of American Feed Control Officials.

Grain Warehousemen Advised to Sign Storage Pact Soon

WASHINGTON — Grain warehousemen have been advised by James A. Cole, director of the Minneapolis CSS Commodity office, that the revised Uniform Grain Storage Agreement and schedule of rates which become effective June 30, 1956, will be offered to them for signature at the earliest possible date.

Warehousemen who do not enter into the revised agreement on or before June 30 or within 30 days after the revised agreement is mailed by the Commodity Stabilization Service, will have their warehouse(s) removed from the list of approved warehouses for price support purposes, according to Circular Letter No. 90 issued by Mr. Cole.

The letter further explains that those warehousemen who do not wish to enter into the revised agreement may terminate their present agreement by giving written notice 30 days prior to June 30 or within 30 days after receipt of the revised agreement. In the latter case, the current agreement and schedule of rates will remain in effect for a period of 30 days following receipt by the Minneapolis office of such notice.

California Firm Names Manager

TULARE, CAL.—Dale Hillman has been named manager of the feed division of the J. D. Heiskell Co., central California feed processing firm.

He has been associated with the company for several years and succeeds Rae Saltzman, now a member of the feed department of Berger & Plate, 50 California St., San Francisco.

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Asphalt Laminated Kraft	✓	
Wet-Strength Kraft	✓	
Water Repellent Kraft	✓	
Stak-LOK Super Rough Kraft	✓	
Valve Bags—sewn or pasted	✓	
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Flat Sewn Valve Bags	✓	
Flat Sewn Open Mouth Bags	✓	
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R. C. Smith C. K. Dougherty

Douglas Chemical Appoints Managers

KANSAS CITY—The Douglas Chemical Co. has announced the appointment of two new district managers. Richard C. Smith will manage sales in western Kansas and Charles K. Dougherty will cover Oklahoma.

Mr. Smith has grown up in the grain fumigant and chemical field, spending his last four year in pharmaceutical chemicals. He attended Drake University, Des Moines, and the University of South Dakota.

Mr. Dougherty, born and reared on an Oklahoma farm, also is experienced in the chemical and grain fields and formerly was associated with Dallas and Chicago firms. He attended Phillips University in Enid, Okla.

The Douglas Chemical Co. headquarters in North Kansas City, and manufactures grain protectants, fumigants, insecticides and agricultural chemicals.

Deal Completed to Raze N. Y. Exchange

NEW YORK—The New York Produce Exchange, for many decades the center of the grain and flour markets for this area, will be razed and replaced by a 30-story office building, it was announced May 7. The new air-conditioned building of 1 million square feet rentable area is scheduled for completion in late 1958 or early 1959.

The real estate firm of Charles F. Noyes Co., Inc., disclosed that it intends to move the 200 tenants from the 72-year-old exchange into two smaller buildings before demolition starts in about six months. During demolition, the Produce Exchange will find temporary quarters, and later occupy 22,000 sq. ft. in the new building.

It is reported that the building will cost $25 million and that the site is covered by a 100-year lease from the Produce Exchange wherein the rent, including taxes, will aggregate another $35 million.

A somewhat similar plan, announced by another real estate firm in late 1953, fell through.

Kansas Grain, Feed Dealers Elect New Officers

TOPEKA, KANSAS — Royal R. Cox, Cox Grain Co., Iola, Kansas, is the new president of the Kansas Grain & Feed Dealers Assn. He was elected at the association's 59th annual convention, held at the Kansan Hotel here May 3-5, succeeding R. C. Davidson, Jr., Davidson Grain Co., Hutchinson, who automatically becomes an ex-officio director.

Other newly-elected officers and directors for the 1956-57 fiscal year are as follows: R. P. Coupland, Tribune Grain Co., Inc., Tribune, vice president; David E. McKee, C-G Grain Co., Topeka, director; Milton L. Morrison, Morrison Grain Co., Inc., Salina, director; J. H. Voss, Voss Grain & Seed Co., Inc., Downs, director; S. Dean Evans, Sr., Evans Grain Co., Salina, director.

Hold-over directors are Ellis K. Cave, Dodge City Terminal Elevator, Dodge City; W. E. Cooper, Cooper Grain Co., Colby; H. J. Gudenkauf, Frankfort Grain Co., Frankfort; J. O. Kocher, General Mills, Inc., Wichita.

O. E. Case, Hutchinson, continues as secretary-treasurer.

Among the speakers at the convention was Ray B. Bowden, executive vice president of the Grain & Feed Dealers National Assn., Washington.

FOR 9% LESS FEED PER DOZEN EGGS

Feed MAYO'S "SNOW FLAKE" Pure Reef OYSTER SHELL Free Choice

Send for PRICES and SAMPLES

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SEA RESEARCH

Scientific advances in the field of animal and poultry nutrition have placed a premium on research in the development of more effective well-balanced rations. The extensive research program of Philip R. Park, Inc., manufacturers of MANAMAR "sea power" products, has contributed greatly to the nation-wide acceptance of MANAMAR feed supplements.

These sea power supplements are a rich natural source of vitamin B-12, other B complex factors... and growth factors still unidentified... essential amino acids from fish proteins.. and important trace minerals. Philip R. Park, Inc., has literally put the "sea" in research.

Here are some of the nutritional firsts resulting from Philip R. Park, Inc., research:

- Mineral rich dehydrated kelp
- Condensed Fish Solubles (Lassen Process)
- Fish liver concentrate
- Fish glandular hydrolysate
- Ribo fish flour

for complete data, analysis and product description, write...

PHILIP R. PARK, INC.
FEED ENGINEERS

Manufacturers of MANAMAR *"Sea Power" Supplements*

Berth 42, Outer Harbor, San Pedro, California

145 West First Street, Dubuque, Iowa

IT'S ECONOMY WISE TO JERSEEIZE WITH JERSEE

VITAL-MIN a Pre-Mix VITAMINS MINERALS

Made by the makers of VITAMINIZED and MINERALIZED CONCENTRATES since 1922.

Jobbers and Warehouses From Coast to Coast

THE JERSEE CO. MINNEAPOLIS MINN.

WRITE TODAY FOR DEALERS SALES HELPS!

Grub Development Prevented Within Cattle in Tests

WASHINGTON—The U.S. Department of Agriculture reported recently on experiments in which the feeding of a chemical prevented the development of the common cattle grub within cattle.

Thus, USDA said, it has been demonstrated experimentally for the first time that the grub can be kept from developing within cattle.

This feat, long a goal of agricultural science, was accomplished by feeding an organic phosphate chemical — O,O-dimethyl-O-2,4,5-trichlorophenyl phosphorothicate — to grub-infested animals, USDA said.

The chemical, designated for experimental purposes as Dow ET-57, is systemic. It moves through the bodies of cattle to destroy grubs wherever they may occur in an animal's flesh.

"These first highly promising experimental results are considered a milestone in research progress toward development of a systemic grub-control chemical that can be used by livestock men," USDA said. "Research is currently in progress to determine the suitability of ET-57 in terms of grub control, toxic effects on the animals and chemical residues in milk or flesh."

Cattle grubs cost the livestock industry an estimated $100 million a year in losses of meat, milk and damaged hides. New facts that could increase this loss estimate have been announced by the Sioux City, Iowa, Livestock Sanitary Committee, which during the period January-April, 1955, surveyed all cattle received at several typical midwestern packing plants. The committee's survey showed that 38% of the cattle were grub-infested, and that because of this infestation packers trimmed away from loins and ribs, on the average, an extra $8 worth of meat.

The pest is controlled at present by use of the insecticide rotenone to treat the grub after it makes an emergence hole through the hide on the back of an animal. This type of control assures some protection against future infestation. However, it goes into effect only after the grub has spent some seven months developing as a parasite within the body of the animal. When it emerges from the animal's back, it drops to the ground and pupates. Heel flies emerge from the pupae. These attach their eggs to the hair on cattle, greatly disturbing the animals. The eggs hatch into tiny grubs that enter through the skin into the flesh of the animal and thus start the cycle again.

"ET-57 is not the first systemic chemical to control cattle grubs, but it is the first to prevent grub emergence," USDA said. "During the past few years, entomologists of USDA's Agricultural Research Service have marked up successes against cattle grubs by feeding or injecting cattle with such insecticides as aldrin, dieldrin, lindane, Bayer L 13/59 and diazinon. Grubs in cattle treated with these chemicals generally emerged from the backs of the animals but failed to survive pupation. In this way these experimental materials were as effective as rotenone, which is rubbed into or sprayed on the backs of cattle as grubs emerge.

"The men responsible for research with ET-57 are entomologists G. W. Eddy and A. R. Roth of the USDA's Agricultural Research Service laboratory at Corvallis, Ore., and W. S. McGregor and R. C. Bushland of the service's Kerrville, Texas station. Veterinarian R. D. Radeleff, also stationed at Kerrville, has carried on research to determine the toxicity of ET-57.

"Investigations were carried on at both locations against Hypoderma Lineatum, the common cattle grub. In tests at Kerrville last year ET-57 was fed to grub infested cattle at the rate of 100 milligrams per kilogram of animal weight (a 1,000-lb. animal would receive 1.6 oz. of ET-57). Treatment was made two to five months before grubs normally appear in the backs of cattle. Only one grub appeared in the backs of four out of five treated cattle. In five similar, but untreated cattle, 98 grubs appeared. In similar tests at Corvallis, ET-57 was 88% effective in preventing grub development.

In February, 35 or 60 calves in a South Dakota herd were similarly treated and shipped to Kerrville for observation. Grubs were already beginning to appear in the back of the animals at the time of treatment. During the observation period an average of 30 new grubs appeared in the back of each untreated calf; none appeared in the treated animals. Most of the grubs in the back at the time of treatment were killed by the insecticide.

Bert Whitlock Named To USDA Grain Post

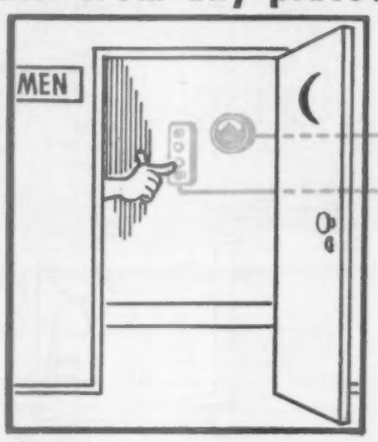
WASHINGTON — Appointment of Bert W. Whitlock as director of the grain division in U.S. Department of Agriculture's Agricultural Marketing Service has been announced by O. V. Wells, AMS administrator. Mr. Whitlock has been with the department 39 years. During the past year he has been acting director of the grain division.

Mr. Whitlock is an authority on grain grading, standardization and inspection. He is widely known in the grain trade in the U.S. and is co-author of the inspection manuals used in this country for grains, beans, peas and hops. He has represented the USDA on foreign missions having to do with grain in international trade. These included firsthand studies of Oriental markets for U.S. wheat and flour, and of European markets for malting barley. In 1952 he was given the department superior service award.

The Grain Division, of which Mr. Whitlock has become director, administers the U.S. Grain Standards Act and the Federal Seed Act. The division also conducts standardization studies, a nation-wide permissive inspection service, and a market news service on rice, beans, peas, hay, hops, grain products and oilseed products.

NOW... you can control the feeding rate of your hammermill from any place...

REVOLUTIONARY FORDS Remote Control HAMMERMILL



with electrically operated "PUSH BUTTON" Feed Control

THE ONLY COMPLETE CONTROL FOR ALL 3 Grains • Ear Corn Roughage By the Push of a Button

The enormous throat provides unobstructed feeding of roughages (even 20" square bales) as well as ear corn and small grains. When the feed control is in closed position no material can enter the mill. This chute, with any type of extension including gravity dump sink above the mill, can be completely filled with material. When the mill is running, the feed control can be opened, by the remote control button, until the ammeter registers the proper horsepower. When stopped at that position, the material will be ground uniformly, without power surge, and with maximum efficiency.

UNIFORM GRANULATION—All material is ground *in suspension* against the feed control plate to the size determined by the grind "setting" before passing through the screen. The action of the hammers on the suspended material pulverizing against the control plate eliminates "stringiness" and provides uniform granulation. Exposed hammers at base of inlet chute provide a "live bottom" to prevent bridging and assure a constant flow of material.

CONTROL YOUR GRIND FROM THE WORK FLOOR... DUMP SINK ...THE MILL...THE OFFICE...OR *ANYWHERE!*

● The most outstanding new development in the industry, this new electrically operated remote feed control is exclusive with FORDS Industrial Hammermills. This new unit controls the feeding rate of hay and other roughages, as well as grain and ear corn, into the FORDS mill by the push of a button. Lets you operate the mill from any place—inside or outside the building, or even from another building. Enables you to grind at a uniform, constant rate, with exactly the horsepower available, and assures a true *granulation* from positive "suspension" grinding. Even hay and roughages grind uniformly without variance in particle size or the "strings" common to average grinding. Since it virtually eliminates surges in power demand, the new FORDS Electric Control materially reduces over-all electric power costs. Makes it unnecessary to use a crusher feeder, with motor and drive. Many installations using this new control will not need a drag conveyor and drive for conveying material to the mill. Find out how much you can *save* on time, equipment and operating costs with this new FORDS Remote Control Hammermill.

Write Today for Complete Information

NATIONWIDE SALES AND SERVICE

MS MYERS-SHERMAN COMPANY

Manufacturers of FORDS Hammermills — Molasses Blenders —Vertical Mixers—Corn Shellers—Pneumatic GrainVayors

2201 S. ILLINOIS STREET, STREATOR, ILLINOIS

OLD PROCESS SOYBEAN MEAL and CAKE

45% Protein—5% Natural Fat GUARANTEED

No adulterations • Clean Nutritious • Palatable • Fragrant

A Dependable Supply Truckloads or Cars

COSHOCTON FARMERS EXCHANGE COMPANY

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A SPECIAL MESSAGE—

and an invitation to members of the American Feed Manufacturers Association

Pfizer | *Agricultural Sales Division*

Chas. Pfizer & Co., Inc., 630 Flushing Ave., Brooklyn 6, N. Y. • EVergreen 8-3800

World's largest producer of antibiotics

To Our Friends In The Feed Industry:

You are meeting in Chicago this week to discuss today's problems and tomorrow's opportunities for the feed industry—to explore new ways to expand your area of service to agriculture.

As a supplier of feed ingredients, we are firmly committed to a policy of doing all we can to contribute to this expansion.

And...from discussions in recent months with many members of the feed industry—with feeders—with animal nutritionists, and other agricultural leaders, we firmly believe that the next great area of expansion for the feed industry will be in formula feeds for beef cattle.

It's bound to come. It has to come if beef feeders are to compete with poultry and pork products that are being produced at lower cost each year due to use of growth-promoting, cost-reducing formula feeds.

Many of the people we've talked to share our conviction that the time required to develop this vast, new market can be materially shortened.

From things we have learned at these meetings, we have formulated a program which we believe can help the feed industry speed up acceptance of formulated feeds for beef.

Every feed manufacturer is invited to participate in this program. Please see the following pages for details.

Cordially,

Manager, Agricultural
Sales Division

THIS IS TOMORROW'S

POTENTIAL

Number of beef cattle in feedlots and on ranches on Jan. 1, 1956, is estimated at 62,588,000 head, an all-time high.

Per capita consumption of beef has gone up every year since 1951, from 55.3 pounds per person to an estimated 82 pounds this year.

But while we are now putting away beef at the rate of 13.6 million pounds a year, we'll need 18 million pounds by 1975 just to supply beef at the same rate we are now eating it!

The trend in the beef cattle feeding industry is toward formulated feeds. Substantial gains in tonnage were made last year.

Yet, only about 15% of feed consumed by beef cattle is a manufactured product...compared with the more than 15 million tons of grain and protein concentrates going into the nation's beef cattle, only about 2 million tons is formulated by the feed industry!

BIGGEST MARKET

OPPORTUNITY

Due to increased competition from other meat producers and narrowing spreads between cost and market price, cattlemen are aware, as never before, that ways must be found to reduce their cost of producing beef.

For answers, logically they're turning to scientists and to the men who bring science to the farm in a feed bag...feed manufacturers.

Some of the answers they got in the past few years as feeding urea, vitamin A, trace minerals, antibiotics and Stilbestrol are making them formula-feed minded. Stilbestrol, particularly, gave formulated beef feeds their first big boost.

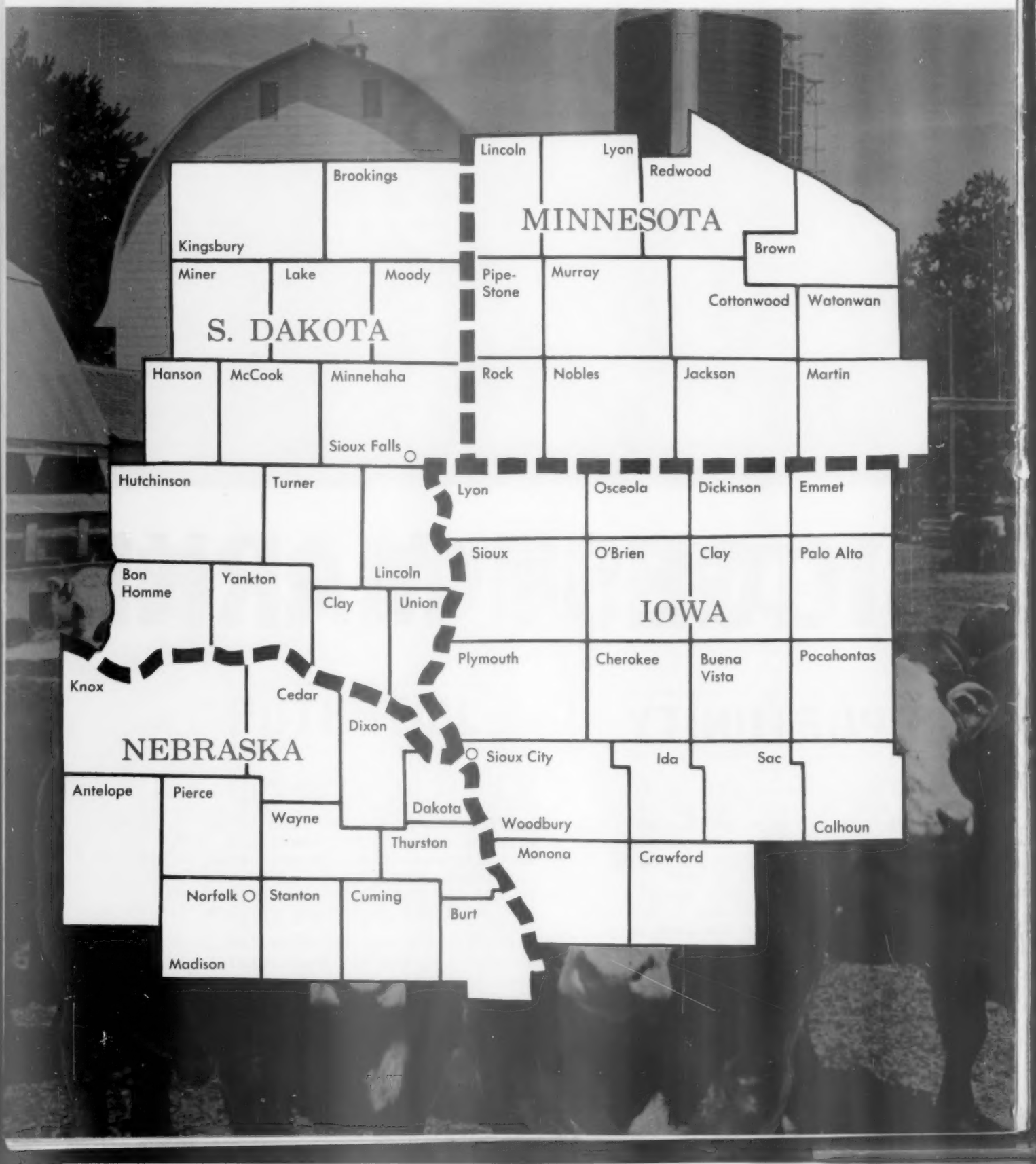
And recent results with antibiotics are bound to stimulate even more interest in formula feeds.

In view of the tiny quantities used and the exact balance of many ingredients needed to make a feed perform efficiently, service is now becoming more and more essential to the cattleman. For only the feed manufacturing industry with its specialized equipment and skills can perform this task.

NOW is the time to dramatize this service and the new feed ingredients that will shorten feeding time and lower feeding costs.

Pfizer has formulated a program for this purpose—a program to speed up opening of the feed industry's next great area of expansion. You—and every feed manufacturer—are cordially invited to take part in this unique project.

BEEF PR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Monona
Crawford
Norfolk
Stanton
Cuming
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Madison

OJECT '57

A PFIZER SALES STARTER

OBJECTIVES

1. To saturate a key, 4-state, 57-county area in the heart of the beef feeding belt with news about the latest developments in all phases of beef nutrition and feeding practices.

2. To show every feeder in this area how he can increase his spread between feeding cost and selling price by taking advantage of these new developments offered by the feed industry.

3. To provide the feed industry with a practical testing laboratory, test market and proving ground for

   formulas sales programs educational programs
   management practices sales potentials
   case histories

   ...and for consolidating what we learn here into future programs for the beef-feeding industry in all parts of the nation.

TEST AREA

Beef Project '57 comprises 57 counties in Iowa, Minnesota, South Dakota, and Nebraska.

This area has:

- --Upwards of 2,000,000 head of cattle
- --Large, small, and medium-sized feeding operations in both feedlots and on ranges
- --A wide range of feeding practices
- --A diversified market and offers nearly typical marketing conditions for most participating feed manufacturers.
- --Excellent facilities for advertising and publicity, having good newspaper, farm papers, radio and television media for efficient coverage.

BEEF PROJECT '57

PLAN FOR

MARKET STUDIES BOTH BEFORE AND AFTER

A comprehensive, scientific market study will be made in advance of the selling and educational effort. This will involve studies of buying habits and feeding practices to establish a base line for measurement.

When the program is completed, another market study will be made to measure results--whatever changes the program has made in buying and feeding practices. Study will be made available to feed manufacturers for analyzing marketing weaknesses and strengths...and for evolving future individual beef feed promotional and sales programs.

BEEF FEEDER FORUMS

A series of feeder meetings will be held throughout the 57-county test-market area starting in August, well in advance of the big fall feeding season. Other "progress report" meetings will be held as Beef Project '57 moves along. Some of the meetings will be held in connection with field trials and actual demonstrations.

Every feed manufacturer is invited to take an active part in running and participating in meetings. Or...you can set up your own feeder meetings.

Each meeting will be a seminar on the latest developments in beef nutrition and feeding practices and how best to apply them, as well as discussions of diseases of feedlot cattle, bloat, high roughage feeds, vermifuges, etc. You can talk about anything that will interest or help the cattle feeder.

A new color sound strip film will cover many of these important developments and emphasize the importance of scientifically blended formulated beef feeds.

ACTION

COMBINED EFFORT OF AGRICULTURAL LEADERS

All these people are being invited to take part in Beef Forums:

Feeder Nutritionists--Representatives of U.S.D.A.
State Extension Service Personnel--County Agents
Vocational Agricultural--Teachers
Leading feeders in test-area states
State University Research Scientists
and
Nutritionists and field men from participating feed manufacturing companies

---

EXTENSIVE ADVERTISING PROGRAM

A strong, educational advertising program will be conducted by Pfizer to saturate the test-market area with news about Beef Project '57 and news about the new cost-cutting developments available in formulated feeds:

Radio--Charts and Teaching Materials--Television--
Newspapers--Local Farm Publications

This advertising program will be an "all-brand" promotion--a program that will promote the merits of every brand of formulated beef feed, without reference to particular brands to expand the total market for all feeds.

BEEF CATTLE JUDGING CONTEST

A contest based on judging market quality of beef cattle from photographs will be held in the test-market area to create additional interest in Beef Project '57 and in formulated beef feeds.

There'll be 57 cash prizes--a top prize of $1,000 and fifty-six other prizes.

Entry blanks will be available at feed stores in the test-market area. The feed tag from any brand of formulated beef feed mailed in with entry blanks is the proof of purchase and the only "Admission price."

HERE'S HOW YOU CAN TIE-IN WITH

1. Review your entire line of beef feeds and bring them up to date by incorporating the latest nutritional developments.

2. If you would like the latest data on these new developments, your Pfizer salesman will be glad to help you.

3. If your beef feed line is incomplete, expand it to take advantage of the interest and excitement Beef Project '57 is sure to create.

4. Be certain you have an adequate supply of literature and other educational-promotional material for distribution to feeders.

5. Make certain your salesmen are familiar with beef feeder problems and the opportunities this industry offers. Pfizer salesmen will be glad to review the entire story of Beef Project '57 with you.

6. Make certain you have complete distribution in the test-market area.

7. Develop a Beef Project '57 dealer program. Supply dealers with adequate selling aids to take advantage of the interest that will be stirred up. Pfizer will gladly supply you with charts, films and other educational materials.

8. Plan to participate in feeder forums or set up your own feeder meetings—there's no restriction on what you can talk about. Discuss your feeds, feed ingredients, formulating facilities, new developments you are working on, pass along feeding and nutritional suggestions, etc.

9. Advertise your feeds in the test-market area.

10. Most important—register now for Beef Project '57 before and after market studies...be sure you get your copy of these important studies.

If you have additional questions on how you can best take advantage of Beef Project '57 ask your Pfizer salesman. He'll be glad to answer them and to work with you.

Pfizer

CHAS. PFIZER & CO., INC. *World's largest producer of antibiotics*

630 Flushing Ave., Brooklyn 6, New York
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1151 Chattahoochee Ave., N.W., Atlanta 2, Georgia
425 N. Michigan Ave., Chicago 11, Illinois
1500 16th Street, San Francisco 3, California

CONVENTION CALENDAR

May 17-22—Sales Workshops, Midwest Feed Manufacturers Assn.; May 17-18, Fort Worth, Worth Hotel; May 21-22, Kansas City, Aladdin Hotel; exec. vice pres., Lloyd Larson, 20 W. 9th St. Bldg., Kansas City 5, Mo.

May 21—Des Moines Feed & Grain Club Field Day; Des Moines Golf & Country Club; chmn., Tom G. Dyer, Sargent & Co., Des Moines 15, Iowa.

May 21-22—National Cottonseed Products Assn.; Statler-Hilton Hotel, Dallas; sec., John F. Moloney, 19 S. Cleveland St., Memphis, Tenn.

May 23-25—American Feed Manufacturers Assn.; Morrison Hotel, Chicago; sec., W. T. Diamond, 53 West Jackson Blvd., Chicago 4, Ill.

June 4-5—Eastern Federation of Feed Merchants; Hotel Commodore, New York; sec., Howard J. Benson, Eastern Federation of Feed Merchants, Sherburne, N.Y.

June 4-5—Central Retail Feed Assn.; Schroeder Hotel, Milwaukee; sec., Eldon H. Roesler, 1712 West St. Paul Ave., Milwaukee 3, Wis.

June 4-5—Georgia Feed & Poultry Conference; Dinkler Plaza Hotel, Atlanta; sec., Will L. Kinard, 208 William-Oliver Bldg., Atlanta 3, Ga.

June 6-9—Grain Processing Machinery Manufacturers Assn.; French Lick Springs Sheraton, French Lick, Ind.; sec., Raymond J. Walter, 511 Fifth Ave., New York 17, N.Y.

June 7-10—Canadian Feed Mfrs. Assn.; Sheraton Brock Hotel, Niagara Falls, Ont.; reg., Herbert Hickling, Wm. Stone Sons, Ltd., Ingersoll, Ont.

June 11-12—Montana Nutrition Conference; Montana State College, Bozeman; chmn., O. O. Thomas, Montana State College Agricultural Experiment Station, Bozeman, Mont.

June 12-14—Alabama Poultry Industry Assn.; Thomas Jefferson Hotel, Birmingham, Ala.; sec., W. L. Walsh, P.O. Box 567, Montgomery, Ala.

June 15—Pacific Northwest Grain Dealers Assn.; Davenport Hotel, Spokane, Wash.; sec., Pete Stallcop, 418 Peyton Bldg., Spokane, Wash.

June 17-19—Indiana Grain & Feed Dealers Assn.; Purdue Union Bldg., Purdue University, Lafayette, Ind.; sec., Fred K. Sale, 600 Board of Trade Bldg., Indianapolis, Ind.

June 17-19—Louisiana Poultry Improvement Assn.; St. Charles Hotel, New Orleans; chmn., Clyde Ingram, Louisiana Extension Service, University Station, Baton Rouge, La.

June 19-21—American Dairy Science Assn.; Univ. of Conn., Storrs; chmn., W. R. Hesseltine, Univ. of Conn., Storrs, Conn.

June 20-22—Delmarva Chicken Festival; Ocean City, Md.; sec., J. Frank Gordy, Delmarva Poultry Industry, Inc., Selbyville, Del.

June 28-30—Association of Southern Feed & Fertilizer Control Officials; Hotel Roanoke, Roanoke, Va.; sec., Bruce Poundstone, U. of Ky. Agricultural Experiment Station, Lexington 29, Ky.

July 10-11—Cornell Poultrymen's Get-together; Cornell University, Ithaca, N.Y.; extension director, M. C. Bond, Cornell University.

July 15-16—New Mexico Grain & Feed Dealers Assn. summer meeting; Lake View Hotel, Carlsbad, N.M.; chmn., R. C. Hemenway; sec., H. B. Hening, Box 616, Albuquerque, N.M.

July 17-20—American Poultry & Hatchery Federation; Minneapolis Civic Auditorium, Minneapolis, Minn.; mgr., Ed G. Gray, 521 East 63rd St., Kansas City 10, Mo.

Aug. 7-10—Poultry Science Assn.; No. Carolina State College, Raleigh; sec., C. B. Ryan, College Station, Texas.

Aug. 10-11—North Carolina Feed Mfrs. Assn.; Fort Sumter Hotel, Charleston, S.C.; sec., Louis Maxwell, Box 807, Goldsboro, N.C.

Aug. 13-15—American Soybean Assn. and National Soybean Processors Assn. joint conventions; University of Illinois, Urbana; R. G. Houghtlin, pres., NSPA, 3818 Board of Trade Bldg., Chicago 4, Ill.; George M. Strayer, exec. vice pres., ASA, Hudson, Iowa.

Aug. 13-14—Wisconsin Nutrition School for Feed Men; U. of Wis., Madison; chmn., Gus Bohstedt, Dept. of Animal Husbandry, U. of Wis. College of Agriculture, Madison, Wis.

Aug. 15-16—Pennsylvania State Poultry Federation; Pennsylvania State University, University Park, Pa.; chmn., Larry Kegerreis, 1612 N. 2nd St., Harrisburg, Pa.

Aug. 16—New England Feedmen Conference; University of Vermont,

. . . all you need . . .

All the help you need for a complete feed manufacturing and selling program . . . that's what the Ultra-Life Program provides you! Tested and proven vitamin and trace mineral fortification products that fully reflect latest nutritional developments; specialized formula service; laboratory and biological testing facilities; tag registrations and printing; advertising aids; your own firm name 16 page poultry and livestock journal, and many other sales and merchandising helps.

Write today for full details . . . see for yourself how the Ultra-Life Program works for you to help you maintain a strong competitive position.

Ultra-Life Laboratories, Inc.

Main Office and Plant East St. Louis, Illinois

One of the Country's Oldest and Largest Manufacturers of Vitamin and Trace-Mineral Products

NOW . . .

PETER HAND E

VITAMIN E SUPPLEMENT

Contains 20,000 I.U. of Vitamin E per pound

STABILITY—*Open*-container storage tests (3 weeks at 113° F, both dry and at 100% rel. humidity) proved Peter Hand E's stability under the most trying conditions.

AVAILABILITY—Peter Hand E comes in the same free-flowing, hard beadlet form that has proved so effective as a coating for Peter Hand Vitamin A. This coating is known both for its high protective quality and for its ready digestibility—quickly releasing Peter Hand Vitamin E in the intestinal tract for complete biological activity.

RELIABILITY—Peter Hand Research Laboratory and Experimental Farm constantly test Peter Hand products to assure highest quality and effectiveness.

Day by day scientific research increases our consciousness of the importance of Vitamin E in livestock and poultry rations.

Some common results of low Vitamin E rations.

- Poor fertility and hatchability in turkeys.
- Enlarged hocks in turkeys.
- "White muscle disease" in calves.
- "Stiff-lamb disease."
- "Crazy chick disease" in poultry.
- "Yellow fat disease" in mink.

PETER HAND FOUNDATION

Division Peter Hand Brewery Co.

1000 W. North Avenue, Chicago 22, Illinois • MOhawk 4-6300

ALSO SUPERIOR QUALITY CUSTOM PREMIXES BLENDED TO YOUR EXACTING SPECIFICATIONS

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Mail this coupon for complete details

Peter Hand Foundation
1000 W. North Ave., Chicago 22, Ill.

Please send me full data and recommended usage on Peter Hand Vitamin E Supplement.

NAME_____

ADDRESS_____

CITY_____ ZONE____ STATE_____

Source of easy profits!

Here's why . . . Because your customers know they need Morton T-M Salt. In practically every farm publication they read in 1956 they will see eye-catching, memorable sales messages like these . . .

Morton Trace-Mineralized Salt
for more milk, husky calf crop
Morton Trace-Mineralized Salt
for healthier hogs, healthier profits
Morton Trace-Mineralized Salt
for healthier cattle, healthier profits
Morton Trace-Mineralized Salt
for more wool, big lamb crop!

Thus, when anyone comes into your place of business, all you have to do is say:—"Do you need Morton Trace-Mineralized Salt today?" Chances are they will need some. Can you think of any easier way to sell and make a more consistent profit?

What do we do for you? The Morton Salt Company backs the name "Morton" and a fine product with the most powerful advertising ever!

In 1956, in practically every issue of the best-read farm publications in your trading area—State Farm Papers; Regional Publications (Capper's, Successful, Progressive, Southern Planter); Special Livestock Magazines (Breeders Gazette, Western Livestock Journal, Hoard's Dairyman)—you will find advertisements urging your customers to buy Morton T-M Salt. That means they are presold on Morton T-M Salt . . . ready to buy at the drop of a hint.

Stock up on Morton Trace-Mineralized Salt. Be ready to meet the demand of your customers. When a man wants salt for his livestock, he wants Morton T-M Salt.

★ Your customers want it ★ Their livestock need it
★ Your feeds will do a better job ★ You'll make more profit

Sell it by the bag—or block

Morton TRACE MINERALIZED **Salt**
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Burlington, Vt.; sec., George E. Durgin, Box 345, Wakefield, Mass.

Aug. 20-21—Kentucky Feed & Grain Assn.; Seelbach Hotel, Louisville; sec., W. C. Willock, P.O. Box 1914, Louisville, Ky.

Aug. 27-29—National Broiler Convention and All-Industry Exposition; Claypool Hotel, Indianapolis, Ind.; pres., H. H. Earthman, National Broiler Assn., 155 W. First St., Elmhurst, Ill.

Sept. 9-11—Grain & Feed Dealers National Assn.; Morrison Hotel, Chicago; sec., John C. Bowden, 100 Merchants Exchange Bldg., St. Louis 2, Mo.

Sept. 10-11—Minnesota Animal Nutrition Short Course; University of Minnesota, St. Paul Campus, St. Paul; chmn., Dr. Elton L. Johnson, Department of Poultry Husbandry, University of Minnesota.

Sept. 20-21—Arkansas Formula Feed Conference; University of Arkansas, Fayetteville; chmn., Dr. E. L. Stephenson, Department of Animal Husbandry.

Sept. 23-25—Pennsylvania Millers & Feed Dealers Assn.; Abraham Lincoln Hotel, Reading, Pa.; sec., Richard I. Ammon, P.O. Box 329, Ephrata, Pa.

Sept. 26-27—Michigan Hatchery Conference; Michigan State University, East Lansing, Mich.; sec., Harry Hathaway, Michigan State Poultry Improvement Assn., East Lansing, Mich.

Oct. 2-4—Northeastern Poultry Producers Council exposition and convention; Onondaga County War Memorial Auditorium, Syracuse, N.Y.; managing dir., Alfred Van Wagenen, 10 Rutgers Place, Trenton 8, N.J.

Oct. 4-5—Texas Nutrition Conference; Texas A&M, College Station, Texas; chmn., J. R. Couch, Dept. of Poultry Husbandry, Texas Agricultural & Mechanical College, College Station, Texas.

Oct. 15-16—California Animal Industry Conference; Fresno Memorial Auditorium, Fresno; sec., John Gilmore, 1400 10th St., Sacramento 14, Cal.

Oct. 17—Virginia State Feed Assn.; Natural Bridge Hotel, Natural Bridge, Va.; sec., J. Paul Williams, 615 E. Franklin St., Richmond 19, Va.

Oct. 17-18—Assn. of American Feed Control Officials; Shoreham Hotel, Washington, D.C.; sec., L. E. Bopst, U. of Md., College Park, Md.

Oct. 17-19—Virginia State Poultry Federation; Natural Bridge Hotel, Natural Bridge, Va.; sec., J. Paul Williams, 615 E. Franklin St., Richmond 19, Va.

Oct. 18-19—Michigan Feed & Grain Conference; Kellogg Center, Michigan State University, East Lansing; sec.-treas., John A. Krusoe, Box 472, East Lansing, Mich.

Nov. 8-9—Cornell Nutrition Conference for Feed Manufacturers; Statler Hotel, Buffalo, N.Y.; chmn., Prof. G. F. Heuser, Rice Hall, Cornell University, Ithaca, N.Y.

Nov. 8-9—Florida Nutrition Conference; University of Florida Agricultural Experiment Station, Gainesville; John P. Feaster, University of Florida, Gainesville.

Nov. 12-13—Missouri Feed Conference; Memorial Union Bldg., University of Missouri, Columbia; chmn., Dr. W. H. Pfander, Mumford Hall, University of Missouri, Columbia, Mo.

Dec. 3-4—Farmers Elevator Assn. of South Dakota; Huron, S.D.; sec., C. C. Anderson, 423 Citizens Bldg., Aberdeen, S.D.

Dec. 3-5—Midwest Feed Production School, Muehlebach Hotel, Kansas City, Mo.; sponsored by Midwest Feed Manufacturers Assn., Lloyd S. Larson, executive vice president, 20 W. 9th St. Bldg., Kansas City, Mo.

Dec. 6-7—North Carolina Animal

(Continued on page 102)

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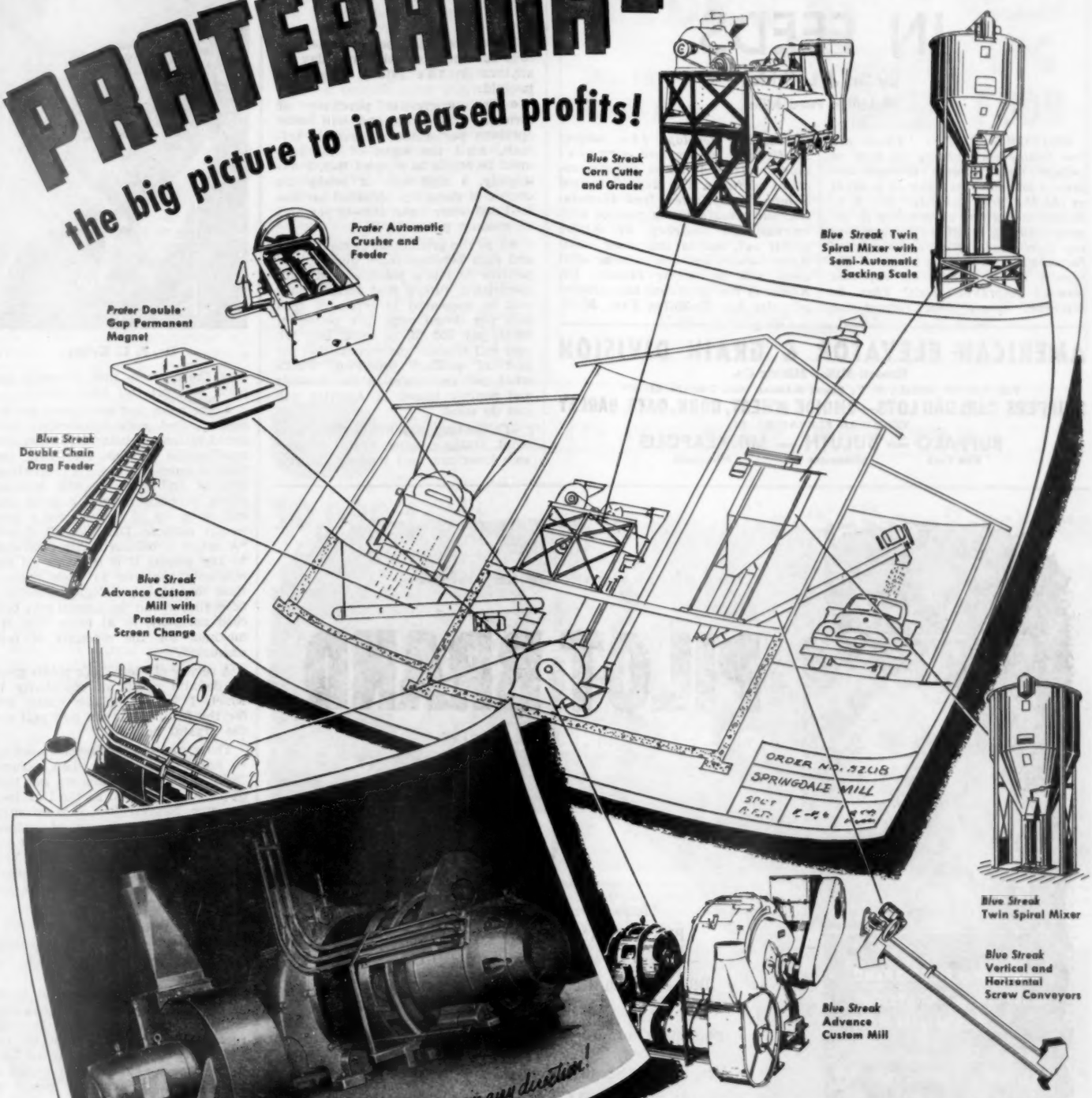
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FUTURE TRENDS IN FEEDS

By Dr. J. L. Krider
McMillen Feed Mills

EDITOR'S NOTE: "There are few businesses working so hard to reduce their volume through improved efficiency per unit of product as the U.S. feed industry." Dr. J. L. Krider makes this observation in the accompanying article in bringing out the significance of advances in feed formulation. He notes some of the results which can be expected through improved feeds. Then he discusses future feed formulation trends. He develops the subject briefly and covers two general aspects of it—nutrients and non-nutrient additives. The trend is toward a more complicated feed formulation and manufacturing pattern, with emphasis on efficiency, Dr. Krider points out, and in this trend nutritional balance and non-nutrient additives will be major factors. Dr. Krider is vice president and director of sales for McMillen Feed Mills, Fort Wayne, Ind. This article is a summary of a talk given at the annual meeting of the American Association of Feed Microscopists.

Let us first examine the basic reasons for feed formulation today or anytime in the future. These are twofold:

• The progressive purchaser of formula feeds does and will want optimum performance from his animals, and the input of nutrients must be ample to support this. Fortunately, a high rate of production output is generally obtained on less feed and other input factors per unit of product produced.

So, as the production of meat, milk and eggs becomes more highly competitive (if this is possible) and more specialized, future feed formulations will be measured in terms of feed cost per dozen eggs, per pound of meat, per 100 lb. or milk, etc. We may call it least-cost formulation per unit of product produced. That's what our customers in the feedlots and poultry houses of America will and do want.

It's the responsibility of the experiment stations, land grant colleges and American feed industry to produce the answers that, properly applied, will get this basic result.

Dr. J. L. Krider

• The point just mentioned can be accomplished only by feeding balanced rations. A balanced ration is a combination of feeds furnishing the various nutrients in such proportion, amount and form as will, without waste, properly nourish a given animal or group of animals for a particular purpose. Dr. Mitchell states: "A ration is balanced with reference to any animal if it contains all the nutrients required in such proportions that the physiological functions occurring within the animal may proceed normally, or at rates that are maximal for the amounts of feed consumed."

A review of these basic points gives us definite points of objectivity in which I keenly believe today and for the future. We can now pull out the crystal ball.

There are few businesses working so hard to reduce their volume through improved efficiency per unit of product produced as the U.S. feed industry. Nevertheless, it is essential so that the producers of animal products can do a more efficient job and make satisfactory profits. This cycle helps in raising the standard of living as well as improving the diets of Americans.

Future Results

What's likely ahead for livestockmen and poultrymen through improved feeds?

1. Three-and-one-half-pound broilers at eight weeks of age on two lb. or less feed per pound of gain. Only recently Dr. Gerald Combs of the University of Maryland reported 3.05-lb. average weight at eight weeks of age on 1.95 lb. feed per pound of gain.
2. Two-hundred-pound meat-type hogs at four months of age on 2¾ to 3¼ lb. of feed per pound of gain.
3. One dozen eggs on 3½ to 4 lb. of feed (250 or more eggs per hen yearly).
4. Fat cattle at 12 months of age on less feed.
5. More milk at lower cost from healthier herds.

More Complicated Feeds

The trend is toward a more complicated feed formulation pattern, more feeds, yes, more definite feeds; more highly efficient feeds; and a greater number of medicated and hormonized feeds. There'll be new ingredients, both natural and synthetic, in feeds. There'll be a tendency for feed tags to look like a page taken from an advanced biochemistry book.

I keenly believe that in the future, the performance of these feeds will rest heavily upon the shoulders—the reputation — of the manufacturer. Good workable feed laws are essential, but the writers of such laws should realize that economical nutrition cannot be legislated. Workable registration information, such

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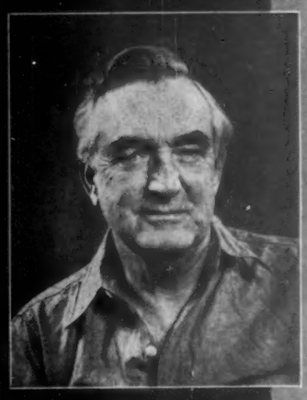

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as the guaranteed analysis and list of ingredients, will always be essential.

Also, more up-to-date chemical laboratories with facilities with better microscopic equipment and highly trained personnel will be essential for several reasons, but primarily for quality control of manufactured products and handling complaint problems that may arise.

Future feed formulation trends will be discussed under two headings:

- Nutritional balance in future formulation.
- Non-nutrient additives.

NUTRIENTS—The first of these, "nutritional balance," will be considered briefly, with emphasis on newer concepts, ideas or developments. Points to be considered include: (A) Energy—(1) carbohydrates: sugars, starches, fiber, and (2) fats: animal, vegetable; (B) amino acids—vegetable proteins, animal and fish proteins, synthetics; (C) Vitamins—natural and synthetic sources; (D) minerals; (E) nutrient balance—energy-amino acid-vitamin-mineral, etc., inter-relationships.

I shall not develop these points in detail but shall consider the over-all views.

Energy: Nutritionists will find ways to more completely utilize the millions of tons of roughages in ruminant feeding. More of these will find their way into the feed bag.

Sugars in baby pig feeds will be used more. Specially processed starches, including sugars, will be included in new formulas. Lactose may become a common ingredient in feeds for baby pigs from birth to three or four weeks of age.

Fats, both animal and vegetable, will find wider use as energy so long as they provide economical feeding results. Poultry fats, tallows, yellow grease, lower quality animal fats, lard below food grade, lecithin, hydrolyzed fats, vegetable fats, various soapstocks properly handled, etc., will be tested and the safe, nutritious ones will be used. Research must continue to test all such products to be sure of economical feeding results, as well as the production of animal products of high quality from animals so fed. The animal products must meet future consumer requirements, being safe, nutritious and eye appealing.

Because some of these fats deeply penetrate the feed particles, chemists and microscopists will not have any fewer problems in testing for such additives.

Amino acids: More synthetics such as methionine, lysine and tryptophan will be used where research shows these to be economical. Two major vegetable sources of protein, soybean oil meal and cottonseed meal, will continue to be upgraded nutritionally and will become more important in critical feeds for non-ruminants. It would seem reasonable that higher protein content soybean and cottonseed meal, with higher biological values as processing technology improves, may be expected.

The progress in this direction will make it essential that processors of animal and fish by-products handle and process their protein by-products in such a manner as to preserve and possibly enhance their biological value. Much of this progress is underway and will continue.

Surely there will be more blending of proteins in mixed feed formulas for non-ruminants with special emphasis on amino acid balance. Amino

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REPORT TO THE FEED INDUSTRY

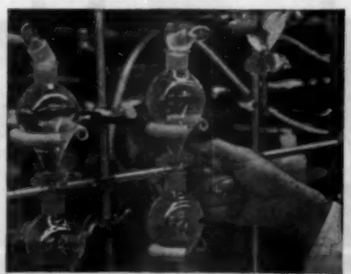
10,000 tests... the story of a 'Stilbosol' service

Since late 1954, Lilly analytical chemists have processed more than 10,000 feed samples submitted by manufacturers using 'Stilbosol.' Assays for diethylstilbestrol content of most samples are completed within 36 hours. Such prompt service can help speed the sale of supplements fortified with 'Stilbosol' and can further assure accurate blending.

Lilly scientists assay samples of beef feeds containing 'Stilbosol' free of charge. You are invited to take full advantage of this helpful service.

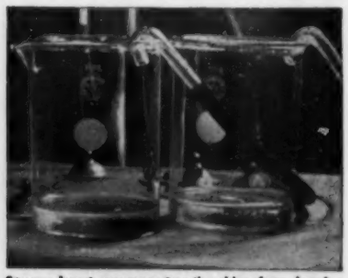
These pictures illustrate the know-how, equipment and man-hours employed to process a sample of your beef supplement.

Feed samples containing 'Stilbosol' are first ground to powder fineness in a miniature mill. This improves extraction of diethylstilbestrol. A portion of the sample is then carefully weighed. Since diethylstilbestrol is soluble in chloroform, sample is placed in extraction apparatus (above), where chloroform percolates through it for 16 hours. This chloroform extract is divided into two equal parts.



A known amount of diethylstilbestrol is added to one portion to make a "sample plus standard." Then both sample portions are carried through the remaining procedures in exactly the same way. Samples are passed through an acid wash to extract the acid-soluble materials. This separates the acid-soluble ingredients, and leaves the diethylstilbestrol.

The chloroform solution is made alkaline to make the diethylstilbestrol soluble in water. This separates the diethylstilbestrol from the chloroform. To isolate the diethylstilbestrol from remaining impurities, phosphoric acid is added. This lowers the alkalinity so the diethylstilbestrol is again soluble in chloroform. This machine shows how much acid to add.



Steam heat evaporates the chloroform, leaving the minute amount of dry, pure diethylstilbestrol as a residue. The diethylstilbestrol is then dissolved in acetic acid. This solution is irradiated by ultraviolet light which changes the solution to a yellowish color. The greater the diethylstilbestrol in the sample, the deeper the yellow color.

This spectrophotometer (illustrated above) measures depth of color. From the reading, Lilly analytical chemists calculate the precise amount of diethylstilbestrol in both standardized and original sample portions. The relationship reveals concentration of diethylstilbestrol in the sample.

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acid requirements of various species will be refined considering the age, weight, and productive performance.

Products such as hydrolyzed feather meal, blood meal, etc., will find usage in more feeds as production facilities are installed to recover them economically.

Vitamins: The future holds greater usage for synthetic vitamins. The trend of the past two decades will continue. We remember vitamin A, vitamin D, riboflavin, niacin, pantothenic acid, choline, vitamin B_{12}, E and K. Stability of carotene, vitamin A and vitamin E in formula feeds will bring various new chemicals into feeds for this purpose.

New type alfalfa products are appearing which contain higher carotene with lower fiber for use in high efficiency feeds.

Unidentified factors will be supplied through various natural sources, including fermentation and distillation by-products.

Minerals: More formulas will contain new trace minerals and new sources of major mineral elements. Phosphoric acid in liquid form may find application in feeds. New equipment in feed mills and new types of formulations would be required.

Zinc in swine feeds to help prevent parakeratosis will be used more widely, unless research shows us how to prevent this disorder through better formulations.

To these, add sodium chloride, iodine, calcium, manganese, iron, copper and cobalt, which are in common usage, and you have a sample of what's ahead in minerals.

Nutrient balance of available energy-amino acids-vitamins-minerals, etc., will receive more emphasis. Higher levels of available energy through the use of fats, highly digestible carbohydrates, lower fiber, etc., will make it necessary to provide a higher level of protein of top quality, with levels of vitamins and minerals increased so that no deficiency will exist.

This type of ration for poultry, and possibly swine, will create interesting problems for quality control workers, including microscopists.

NON-NUTRIENT ADDITIVES — The final section of this discussion, which will cause us the most problems, but will be most fascinating, deals with "non-nutrient additives" in feeds.

Why will we continue to have demands for non-nutrient additives in feeds?

1. Economic benefits to user.
2. Active research in agricultural experiment stations, and industrial laboratories.
3. Impact of dynamic advertising and promotion of drugs, medicants, hormones, etc., by the manufacturers of these products.
4. "Colorful" agricultural press articles emphasizing "the new."
5. Customer attitudes; benefits to him. Many producers of animal products are experimenters at heart. They want to try new things even though this may be costly. They want drugs like the anticoccidials so that they can produce economically with poorer "housekeeping;" they want the easy way, too. Humans are always looking for miracles.

Mr. Bruce, feed inspection supervisor of the Virginia Department of Agriculture, recently stated that five years ago there were 250 different medicated feeds registered in his office, while today there are over 700.

More non-nutrient additives will find their way into formulated feeds —the trend will continue. Here's a list which includes only a few:

Antibiotics will be more widely used at different levels.

Surfactants: New effective ones may be discovered.

Arsenicals (3-nitro, 4-hydroxyphenyl arsonic acid, arsanilic acid, sodium arsanilate, etc.) in poultry feeds may find wider usage in nonruminant feeds.

Hormones: (a) Diethylstilbestrol (fattening beef cattle)—More than 5 million fattening beef cattle have been fed the hormone since its use in feed was approved in late 1954.

(b) Dienestrol (fattening beef cattle).

(c) Hexestrol (fattening beef cattle).

These or better hormone compounds will be more widely used in fattening cattle rations.

(d) Stilbestrol for capetting poultry and for fattening beef cattle by implant.

(e) Dienestrol diacetate in the feed for hormonizing poultry will increase.

Anticoccidials will tend to be used more widely. A few are nitrophenide, sulfaquinoxaline, nitrofurazone, nitrosal, and nicarbazin, plus others may be developed. Some are toxic and present quality control problems.

Furazolidone for salmonella infections, etc., will find wider use.

Enheptin, histostat and **furazolidone** will be used for blackhead.

Anthelmintics in feeds will be used more widely—cadmium anthranilate and oxide (swine feeds); sodium fluoride (swine feeds); phenothiazine (cattle and sheep feeds); piperazine compounds (swine and poultry feeds); nicotine sulfate and alkaloid (poultry feeds); tobacco dust (poultry feeds).

Chemicals to stabilize essential nutrients in feeds:

DPPD (N, N'-diphenyl-p-phenylene-diamine) is approved for use as an antioxidant in poultry feeds. It also aids in prevention of chick encephalomalacia. (Editor's Note: Recently, subsequent to the time Dr. Krider spoke, the Food and Drug Administration recommended halting distribution of DPPD for use in poultry feeds because of research showing it caused toxic effects in pregnant rats.)

Santoquin (6-ethoxy-1, 2-dihydro-2, 2, 4, trimethyl-quinoline) is used in alfalfa meal to help stabilize carotene for use in poultry feeds.

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lene glycol, butylated hydroxyanisole, propyl gallate and citric acid is another illustration of the value of chemicals in feed ingredients.

These are examples today that point to things to come.

Thyroprotein hasn't been forgotten in feeds for dairy cows.

Urea usage will increase in feeds for ruminating animals. Other nitrogenous sources will be used in competition with urea.

Sodium propionate is already in some commercial dairy feeds and is used to control ketosis. Cortisone and ACTH are also used to treat ketosis but are not in feeds yet.

High level vitamin D feeds for milk fever in dairy cows is here and may expand.

Enzymes — Lewis, Catron, Speer and Ashton of the Iowa Station report:

"Studies of the qualitative and quantitative protein and carbohydrate requirements of early weaned pigs indicated an insufficiency of proteolytic and amylolytic digestive enzymes. Supplementation of soybean protein and casein basal diets for baby pigs with certain proteolytic enzymes increased gains and feed efficiency as much as 29 and 23%, respectively. The results of these researches look promising from both fundamental and applied aspects."

Organic dyes are already being used in dog foods, and may find use in certain feeds for other farm animals.

In conclusion, I sincerely hope the feed industry will always stand for the two basic principles of (a) least feed cost formulation in terms of cost per amount of animal product produced; and (b) balanced rations.

The trend is toward a more complicated feed formulation and manufacturing pattern, with emphasis on efficiency.

In this trend, nutritional balance and non-nutrient additives will be major factors.

It will be an interesting, but somewhat complicated future, with subsequent rewards for all who intelligently and profitably analyze and handle the problems. In it, the nutritionist, chemist, feed control personnel and feed microscopists will find a challenge to do a bigger and better job tomorrow than today.

Purdue Plans Elevator Employees' Course

LAFAYETTE, IND.—Purdue University has announced plans for conducting a two-week Country Elevator Empolyees' Course May 21-June 1. The Indiana Grain & Feed Dealers Assn. helps sponsor this annual school.

Among the subjects to be covered in the two weeks will be "Economics of Elevator Operation," "Elevator Grain Storage and Processing," "Grain Grading and Related Problems," "Seed Testing and Labeling," and "Poultry Feeds and Services."

Enrollment in the course will be limited to 40.

Kansas Researchers Report on Cattle Feeding Experiments

HAYS, KANSAS — Stilbestrol and Aureomycin, each used alone in the rations of steers on full feed in the dry lot, produced gains greater than for steers in a check lot at Kansas State College's Fort Hays Branch Experiment Station at Hays, Kansas, according to a report from the station. However, in this test, there was no advantage in combining the two drugs over stilbestrol alone, the report said.

Stilbestrol-fed steers gained an average of ¼ lb. a day more than the check lot and 1/10 lb. more per day than the steers on Aureomycin. The check lot steers ate $19.56 worth of feed for each 100 lb. gained; the antibiotic steers $18.96; stilbestrol $18.63; and combined stilbestrol and aureomycin $18.69. These feed costs included the cost of the drugs used.

The grain and roughage ration in the feedlot was sorgo silage, mixed grain, cottonseed meal, alfalfa hay and ground limestone. The steers started the test weighing an average 826 lb. and finished in this order—checklot 1198 lb., Aureomycin 1219, stilbestrol 1234, and combination 1237

The steers in all four lots made good gains, the report said. There were no deformities noted during the feeding period or after slaughter. The stilbestrol steers made the cheapest gain, had the second highest gain, and consumed the greatest quantity of feed per 100 lb. gained.

Stilbestrol was given in the feed at a rate of 10 milligrams per head per day and Aureomycin was given at a rate of 72 milligrams per head per day. The same amounts were given where the two were combined.

Meanwhile, in a report from Manhattan, Kansas, Dr. Draytford Richardson of Kansas State noted that alfalfa hay and grain have been used in three tests to study the percentage of roughage in fattening rations for beef heifers.

He said results indicate that 25% roughage (1 lb. hay to 3 lb. grain) gave just as good results as 16% roughage (1 lb. hay to 5 lb. grain). There were only slight differences in rate of gain and no differences in carcass grade and degree of marbling. The relative cost of roughage and grain and length of feeding period probably should determine the amount of roughage to be used in a fattening ration, Dr. Richardson said.

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Liability in Connection With Sales of Feeds, Vaccines, Medicines and the Like

By Mortyn K. Zietz and Carl B. Everberg

EDITOR'S NOTE: The increased sale and use of modern, more complex feeds and of various animal health products has brought greater industry interest in possible problems of liability in connection with the sale of these products. The accompanying article, written in "laymen's" language for persons in the trade, provides legal information and background on the subject. The article is a written resume, with legal research, of a talk which Mr. Zietz made at a Connecticut meeting of poultry service representatives. It appeared originally in the Commercial Law Journal, published by the Commercial Law League of America. The senior author, Mr. Zietz, of Providence, R.I., is a practicing attorney who has basically limited his practice to matters pertaining to the feed and allied industries. He is admitted before the bars of the State of Rhode Island and the Commonwealth of Massachusetts, and he has been admitted to practice before various federal agencies. He is also chairman of the board of Poultry Assurance Foundation of America. Mr. Zietz is a graduate of the Wharton School of Finance and Commerce of the University of Pennsylvania, and he received his law degree from Harvard Law School. Mr. Everberg is a graduate of Boston University Law School and instructor at Boston University.

DEVELOPMENT AND TRENDS OF THE LAW—The law on this subject matter is not exactly recent, there having been court decisions from many years back (many of them having to do with hay fed to cows and horses); nevertheless, since the advent of scientifically prepared feedstuffs, worming medicines and vaccines for inoculation, various trends in the law regarding liability for casualties among animals and poultry are noticeable.

The trends referred to are not very clear as yet because the case law, being the source of the principles and rules governing these matters, is spotty, and there is really no clear, composite picture throughout the country. The reported cases, for the most part, come from intermediate courts of appeal, and do not come generally from the courts of last resort.

THE TWO GENERAL CLASSIFICATIONS OF LAW APPLICABLE—One must consider all claims arising from injuries received in the consumption, whether human or animal, of preparations distributed and sold to the public, from two sides—(1) contract, wherein there may be a breach of warranty, express or implied, and (2) tort, for negligence.

What is a warranty? A warranty is sometimes defined as a contract subsidiary to a contract of sale—the warranty being in the nature of a guaranty that goods sold shall conform to a certain standard, or that certain conditions shall be fulfilled.

An express warranty, which may take almost any form, consists of any affirmation of fact or any promise by the seller relating to goods if the natural tendency of such affirmation or promise is to induce the buyer to purchase the goods, and if he purchases the goods relying thereon. (Sec. 12 of the Uniform Sales Act.)

An implied warranty is a legally imposed warranty on a seller unless there is a stipulation to the contrary between the seller and buyer. There are several classifications of implied warranty set forth in the Uniform Sales Act—i.e. of title, against encumbrances, which are not applicable to the subject-matter at hand. Those involved in the sales of products mentioned here are those of the implied warranty of fitness for a particular purpose (sometimes referred to as a warranty of quality); also the warranty of description, wherein the warranty is that the goods shall correspond to the description, and that the goods shall be merchantable; and, in some instances, warranties that go with a sale by sample, the principal one being that the goods shall correspond to the sample (if the sale has been one by sample). (See Secs. 14, 15 and 16 of the Uniform Sales Act.)

Cases involving express and implied warranties will be explored later herein.

Liability arising from negligence follows an entirely different legal principle. The theory of liability here is that there has been some act, or failure to act, which is a departure from the normal act of an ordinarily prudent person. It may also be said to result from the doing, or the omitting of doing an act, in violation of a legal duty owed by one person to another, the latter sustaining some injury because of such failure. Negligence, of course, includes any wilful, wanton or reckless act. Negligence is the basis for many lawsuits in these times, the majority of them involving casualties in automobile collisions. But the negligence discussed here concerns injuries or fatalities incurred by animals and poultry by reason of the negligent preparation, handling, manufacture of feeds, medicines and similar compoundings.

Liability for negligence does not ordinarily arise out of a contractual relationship between the parties to a suit. Negligence is generally a breach of a non-contractual duty. However, in some of the cases touching the subject-matter of this discussion, negligence is a concomitant of contractual relationships—there is a contract of sale between buyer and seller and the negligence appears in connection with a failure to exercise due care in the mixing of ingredients, or in the condition of the product when it is fed or administered.

Cases will be explored on the issue of negligence later herein.

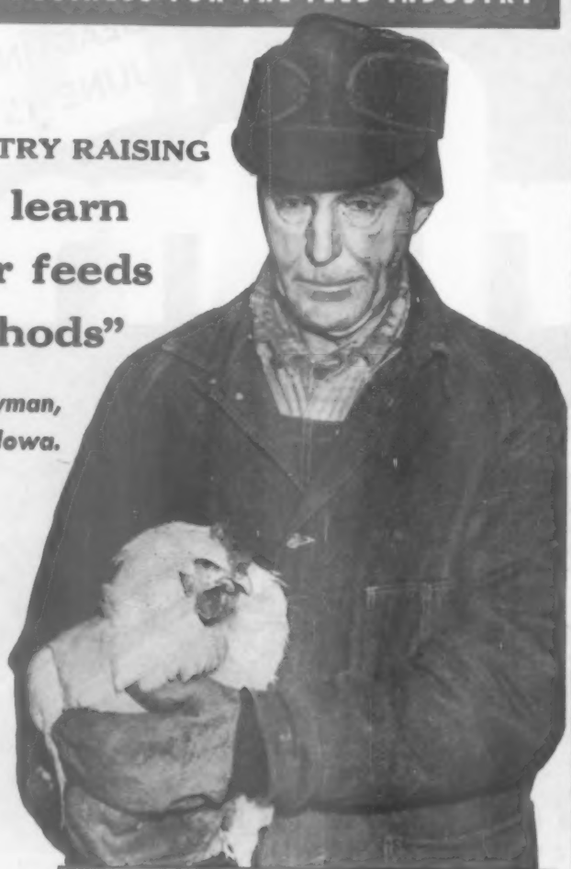
The Levels of Liability—the Manufacturer's Liability—That of the Middleman—That of the Retailer—The

(Continued on page 93)

HOW UNION BAG BUILDS MORE BUSINESS FOR THE FEED INDUSTRY

"AFTER 40 YEARS OF POULTRY RAISING I'm still eager to learn more about better feeds and feeding methods"

Albert Eckhardt, poultryman, Muscatine, Iowa.



"Folks order my Iowa eggs and chicks from as far away as Florida," says veteran poultryman Albert Eckhardt. "I think one reason is that I've always kept up-to-date on the newest and best in poultry raising."

Among Mr. Eckhardt's sources of information are the articles on better feed practice distributed by Union Bag. Many thousands of poultrymen keep posted on developments in feed and feed packaging through this nation-wide campaign.

Their preference for feed-in-Multiwalls is more pronounced than ever before. They are attracted by improved package appearance . . . sold on 50-lb. Multiwalls because they are easier to handle, more sanitary, simple to dispose of when empty.

A growing part of your business

It is increasingly important for you, as a feed manufacturer, to keep up-to-date on Multiwalls. Do you know where your packaging can be speeded, labor saved, costs reduced? Is your package design working full time? Can improved Multiwall packaging machinery save you money?

Talk to the man from Union. He is a good source for fast, dependable Multiwall packaging facts.

"Educational campaigns like Union's build the feed market. Union is doing a job for the industry, both in this feed news program and in the dependable 50-lb. Multiwalls it produces."

Willard J. Wilson, Assistant Sales Manager, Kent Feeds, Muscatine, Iowa

Kent Feeds are among the most popular brands distributed in the fertile Corn Belt of the Mississippi Valley.

UNION Multiwall Bags

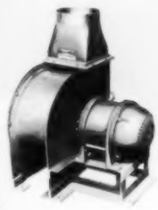
TRADE MARK UNION

UNION BAG & PAPER CORPORATION · WOOLWORTH BUILDING, NEW YORK 7, N. Y.

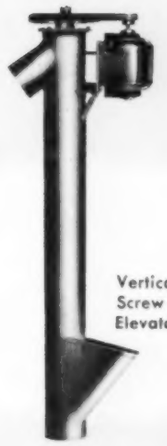
MODERNIZE YOUR MILL WITH KELLY DUPLEX

DEPENDABLE MILL EQUIPMENT

for top service and economy . . . increased profits!



Grain Blower & Exhaust Fan

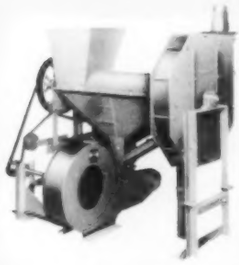


Vertical Screw Elevator

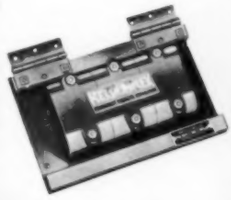
Cob Crusher for making Poultry Litter

Corn Cutter and Grader with Aspirator

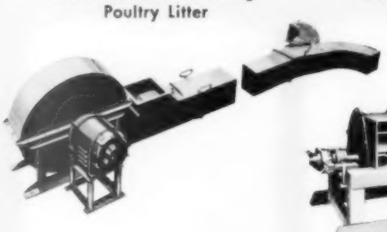
Vertical Feed Mixer ½ to 5 tons and larger



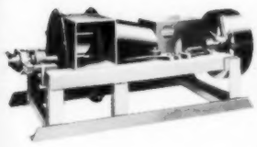
Corn Sheller with blowers for grain and cobs



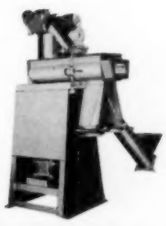
Magnetic Separator protects mill machinery



Forced Air Carloader with motor or belt drive



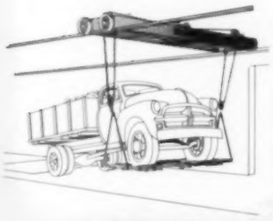
Regular and Pitless Corn Shellers



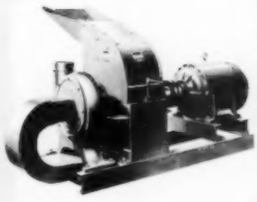
Twin Molasses Mixer

Corn Scalper with or without air cleaner

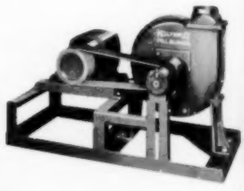
Chain Drag in double and single geared types



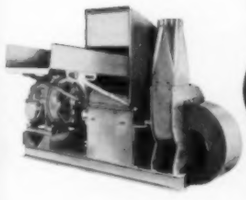
Electric Truck Hoist cuts handling costs



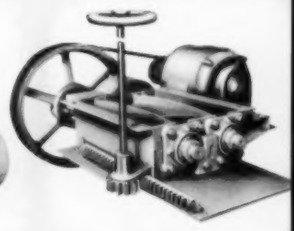
Model "M" Hammermill with direct connected motor



Attrition Mill Blowers for any size plant

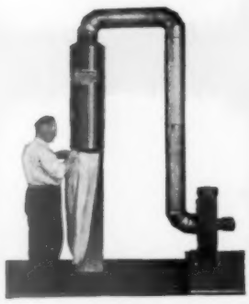


Model "S" Wide Throat Hammermill



Corn Crusher and Feed Regulator

Grain Feeder



Electric Bag Cleaner

every **KELLY DUPLEX** machine is fully **GUARANTEED**

We will gladly ship you any Kelly Duplex machine on approval. If it is not completely satisfactory, you are free to return it within 30 days after arrival at destination, by prepaid freight, for refund of full purchase price. In addition, each Kelly Duplex is guaranteed against defects in material and workmanship for 90 days.

The Duplex Mill & Manufacturing Company Springfield, Ohio

Yes, I'm interested in the KELLY DUPLEX machinery checked at the right. Please send me full information on these machines without any obligation.

NAME_____

FIRM_____

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Mail this Card— No Obligation

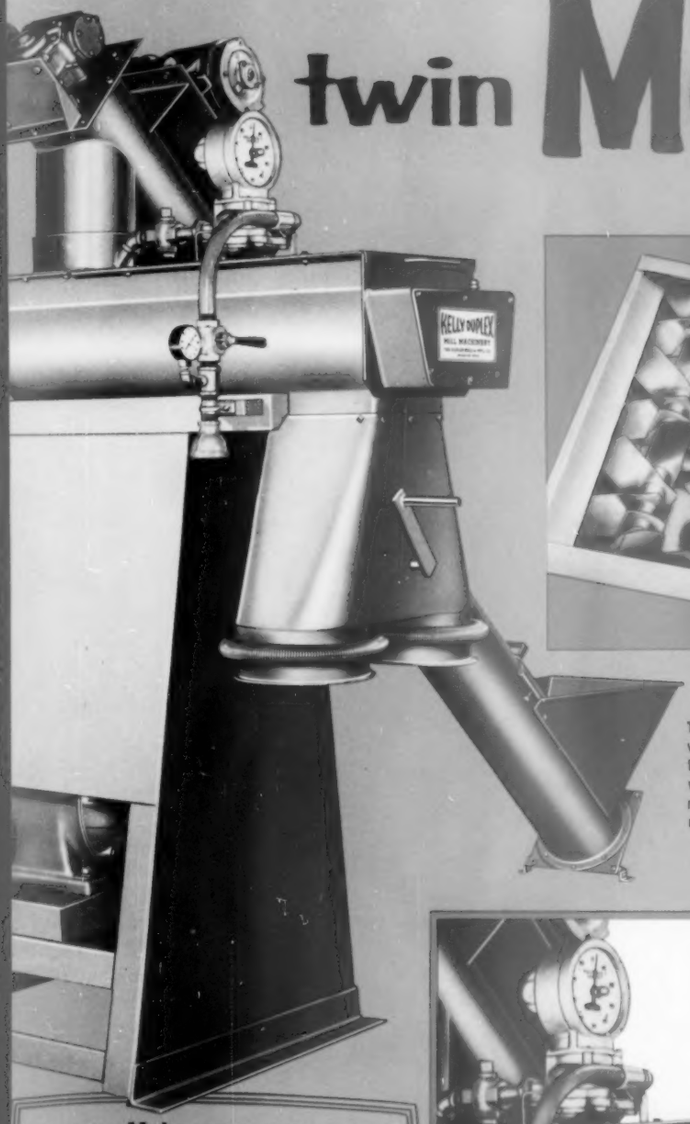
KELLY DUPLEX

Check Here!

- ☐ Twin Molasses Mixer
- ☐ Hammermill
- ☐ Vertical Screw Elevator
- ☐ Electric Truck Hoist
- ☐ Corn Sheller with Blowers
- ☐ Pitless Corn Sheller
- ☐ Regular Corn Sheller
- ☐ Magnetic Separator
- ☐ Cob Crusher
- ☐ Corn Cutter and Grader
- ☐ Vertical Feed Mixer
- ☐ Bucket Elevator
- ☐ Forced Air Carloader
- ☐ Chain Drag
- ☐ Corn Crusher—Regulator
- ☐ Grain Blower
- ☐ Corn Scalper
- ☐ Mill Blower
- ☐ Grain Feeder
- ☐ Electric Bag Cleaner
- ☐ Complete Line Catalog

KELLY DUPLEX

twin Molasses Mixer



The mixing chamber, which consists of 2 rotary shafts and 36 individual paddles, is a model of blending efficiency.

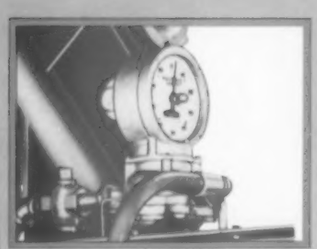
Mixes quickly, evenly, thoroughly without balling or lumping . . . practically eliminates all cleaning!

With a Kelly Duplex Twin Molasses Mixer in your mill, there's big volume and big profits ahead for you in either private brand or custom mixed sweet feeds. Features include a complete, easy-to-adjust control system that lets one man set and maintain the most exacting molasses-feed proportions with absolute accuracy . . . a twin paddle rotor unexcelled for fast, thorough, even mixing—and self-cleaning characteristics . . . a conveyor that swivels to any position or is completely demountable . . . and many, many others.

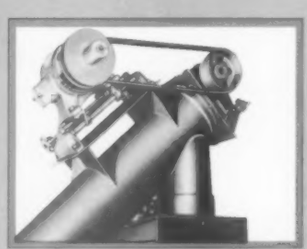
Before you buy, you owe it to yourself to compare this outstanding machine point for point (features, equipment, construction and cost) with all other makes . . . and see for yourself why a Kelly Duplex is your one best buy. The card will bring you full details.

Make your own "point for point" comparison!

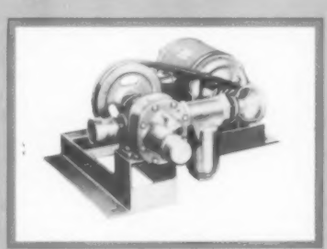
Mail card today for full details



Molasses Meter records in pounds, gives unexcelled accuracy, has turn-back attachment. 3-way valve (at left) can be conveniently hooked up for retail bulk molasses sales.



Variable Speed Control on the 1 H.P. screw conveyor gives you positive, finger-tip control of feed flow into the mixer. Conveyor can be removed from mixer and used elsewhere, if so desired.



Molasses Pump is powered by 5 H.P. motor. Special strainer removes foreign matter before it can enter pump. Adjustable by-pass valve eliminates need for return pipe to molasses supply.

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VIA AIR MAIL

BUSINESS REPLY CARD
NO POSTAGE STAMP NECESSARY IF MAILED IN THE UNITED STATES

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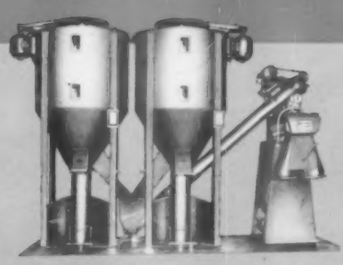
THE DUPLEX MILL & MFG. CO.

SPRINGFIELD, OHIO

Continuous Sweet Feed Mixing



A "Twin" and two Kelly Duplex Feed Mixers give you fast, economical production . . . greater profits

While the batch from one feed mixer is being processed in the "Twin," the second mixer is preparing a new batch. Operation is fast . . . continuous . . . profitable. Vertical feed mixers are available in 6 sizes—½ to 5 ton—to meet your needs.

At last... big packer performance at little packer price...

Here is a lightweight, portable, automatic performer that will handle any product that establishes an angle of repose. Typical examples: rice, sugar, corn, cracker meal, poultry feeds, granite grits, salt and dry chemicals.

Bemis Packer-Ette will reduce your costs through accuracy, speed and efficiency. It is just the packer for you in any operation that does not justify a heavy-duty permanent installation.

Packer-Ette gives you so many benefits and features that it is impossible to do more than hit the high spots here. You'll want to get *all* the facts. Ask your Bemis Man . . . or write us for folder and details.

JUST LOOK . . .

SPEED—Up to eight 100-lb. bags per minute, depending on flow characteristics of your product.

ACCURACY—Plus or minus 2½ ounces or better on 100-lb. bags, depending on product characteristics. Self-aligning and self-cleaning knife edges of the scale assure consistent, accurate weights.

OPERATING EASE—The operator places an empty bag on the filling tube and starts the cycle by depressing the foot switch . . . that's all. The bag holder opens automatically when the filling cycle is complete. All controls are at eye level.

BEMIS VICON® FEEDER—A unique means of moving products from supply hopper to scale beam; a two-stage pulsating feeder tray first feeds rapidly, then at a rate which can be controlled for accuracy. When the exact weight is reached, the feeder cuts off and the filled bag is deposited automatically on the sewing machine conveyor.

CAPACITIES—From 25 lbs. to 150 lbs. Easily adjustable for varying bag sizes.

TAKES LIMITED SPACE—Width, 26″; depth, 42″; maximum over-all height, 97⅛″; minimum, 76″.

LIGHT AND PORTABLE—Shipping weight, 600 lbs. Portable mounting for use in various locations.

NO INSTALLATION SERVICE—Just move it in and plug into a 110-volt, 60-cycle line. All electrical equipment enclosed in cast-iron explosion-proof boxes.

The New Bemis Packer-Ette!

Bemis

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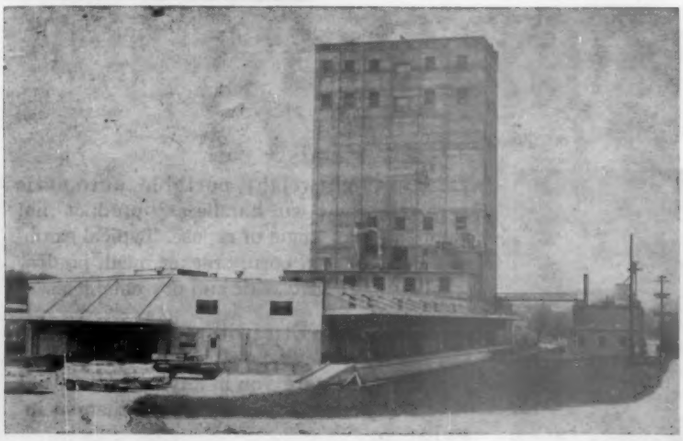

New Allied Mills Feed Plant at Everson, Pa.

Allied Mills, Inc., Opens New Feed Plant at Everson, Pa.

EVERSON, PA.—The new Wayne Feed manufacturing plant, erected here during the past year by Allied Mills, Inc., is now completed and shipments have started, according to L. T. Murphy, Chicago, vice president in charge of production.

The new plant, which has a daily capacity of 500 tons of manufactured feeds, is operated by a wholly owned subsidiary, Allied Mills, Inc., of Pennsylvania.

Mr. Murphy points out that the plant is constructed of reinforced concrete and embodies the most modern quality control, precision feed making equipment, including panel board control gravimetric feed equipment.

Line-Type Plant

In this new mill, Allied Mills is using the continuous-line system. The accompanying pictures show the control panel and the feeders in the plant.

Formulas are set on the control panel. After the sets are made, the panel is actuated, which actuates the feeder line. Thirty-four bins and dump sinks are controlled by this system.

The engineers note that the panel controls a very fine tolerance in production of formula feeds. As an indication of the precision, it is pointed out, the timing is controlled in tenths of seconds, and the product has been checking out on the feeders in tenths of a percent of error.

The feeders shown in Figure 2 are the heart of the blending operation. After these machines are adjusted, the belt speed is the one main variable, with a constantly changing gate opening that holds the extremely close tolerance, according to the engineers.

One method of testing rate of flow and the usual constant checks on the weight per minute flowing from these machines, is by using a very accurate tachometer.

Another type of feeder is shown in Figure 3. This line of feeders handles the miscellaneous ingredients.

A conveyor below the feeders moves the material en masse and is self-cleaning.

The new plant includes facilities so that shipments of inbound ingredients and outbound finished feeds can be handled in bulk, both in trucks and railroad cars.

Feeds are being packed in various sizes of paper bags and cotton and burlap bags.

Plant Manager

David A. Mote, formerly of West Milton, Ohio, is manager of the new plant. Mr. Mote has had a broad experience in the feed milling business, Mr. Murphy said.

Mr. Murphy pointed out that the Everson plant provides shipping advantages for taking care of the "continuing increase in demand" for Wayne Feeds from dealers now served from other Allied Mills plants.

He said the new mill will enable the company to develop and expand sales activities in Virginia, West Virginia, Maryland and Pennsylvania.

The Everson mill is served by the Pennsylvania and Baltimore and Ohio railroads.

Jones-Hettelsater Construction Co., Kansas City, was the general contractor in the construction of the new plant.

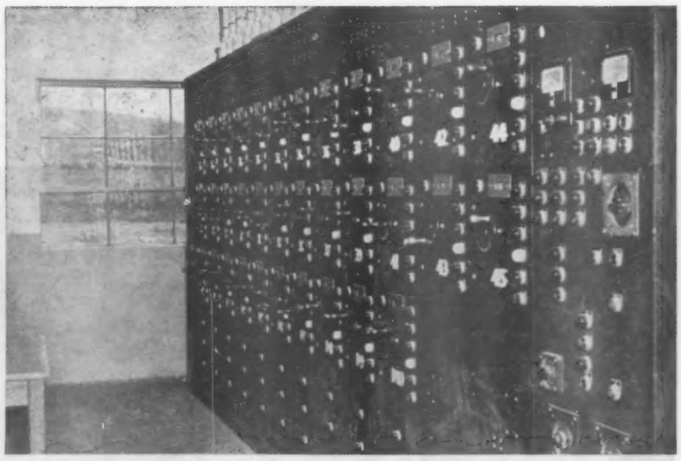

FIGURE 1—This is a view from the entry into the control panel room of the new mill. On the dials are set the formulas that are to be made. This includes all the dry ingredients, as well as liquids. After all of the sets have been made, the panel is actuated, which actuates the feeder line, shown in Figure 2. This panel controls an extremely fine tolerance in the production of feeds. There are 34 bins and dump sinks that are controlled by this system. Twenty-four of these are shown in Figure 2, with the balance of the feeders shown in Figure 3. As an indication of the precision, the timing is controlled in tenths of seconds, and the product has been checking out on the feeders in tenths of a percent of error, Allied Mills officials said.

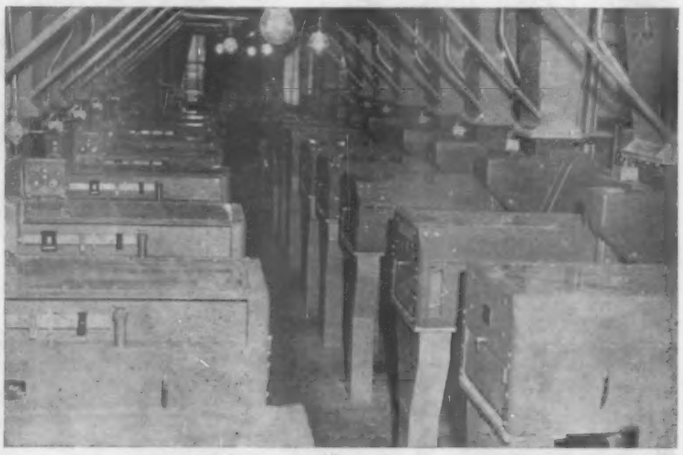

FIGURE 2—In this picture are shown the main or bin line Omega Hi-Weigh feeders. This is the heart of the precision blending operation. Although these machines are intricate to adjust and establish constant weights or factors from the belts—after they are adjusted, the belt speed is the one main variable with a constantly changing gate opening that holds the extremely close tolerance, engineers explained. When these units are in operation, it is rather difficult to believe one is in a line-type feed plant since there is no dust in the air and no one is running back and forth with a stop watch. Strangely enough, one method of testing rate of flow and the usual constant checks on the weight per minute flowing from these machines, is by using a very accurate tachometer.

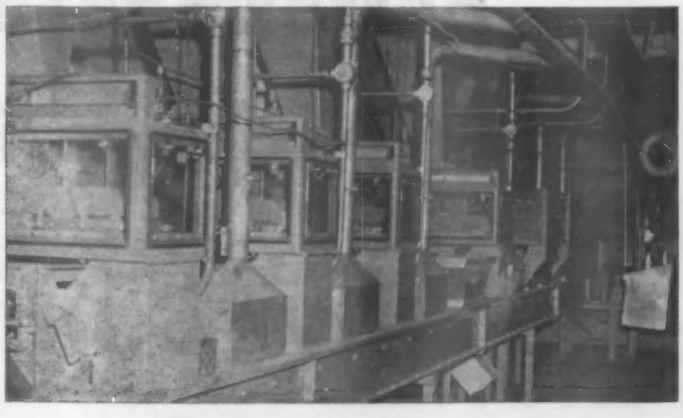

FIGURE 3—In this picture, taken in the basement of the plant, is shown a different style Omega feeder. This line of feeders operates under dump sinks from the first floor and handles the miscellaneous ingredients. Not shown on the right of the picture is a nest of four of this type feeder which handles the majority of the vitamins and premixes. Below the feeders is a Buhler conveyor that moves the material en masse and is self-cleaning. This, as well as the other Buhler conveyors in the plant, were purchased from Buhler Bros. in Switzerland.

Dr. George K. Davis

Dr. George K. Davis Of Florida Honored

TALLAHASSEE, FLA. — Dr. George K. Davis, animal nutritionist at the University of Florida, Gainesville, was recently presented with the annual award of the Florida Section of the American Chemical Society. The presentation took place at a meeting of the section in Tallahassee.

The award is presented annually for outstanding work in chemistry or a related field. Dr. Davis is the second Florida resident to receive the award. He received it for research on the role of trace elements in nutrition, conducted at the University of Florida.

Dr. Davis received his bachelor's degree from Pennsylvania State University in 1932 and his doctor's degree from Cornell University in 1937. He was on the Michigan State University staff before going to Florida in 1942 to head the university's animal nutrition laboratory.

He is well known for his work in the field of trace element nutrition, including his radio-isotope studies. He also is closely identified with the feed industry through the Florida Nutrition Conference, of which he has been chairman since its origin in 1945.

Dr. Davis has authored many publications, is a member of various societies and has served on important scientific committees.

Mississippi Cattle Research Reported

STATE COLLEGE, MISS.—Reports on cattle feeding studies were part of the program at a recent field day at Mississippi State College.

Dr. J. P. Fontenot of the animal husbandry department told of Mississippi work with stilbestrol. He noted that incorporation of the hormone in the ration of drylot-fed fattening steers and heifers increased rate and efficiency of gain. Feeding of stilbestrol to steers receiving a high-corn ration on pasture has not markedly affected rate of gain. Stilbestrol feeding, he continued, resulted in an increase in gross return per steer in pasture-fed steers and drylot-fed heifers and in a decrease in drylot-fed steers.

Dr. Fontenot also reported on work in wintering beef cattle. He said recent work indicates that readily available sources of energy fed in small amounts are of little, if any, more value than less readily available source.

One feeding trial, he said, showed that the amount of cottonseed meal supplemented to oat straw had a marked influence on gains, but the addition of trace minerals, a small amount of molasses and vitamin A to an oat straw-cottonseed meal ration had no effect on gains.

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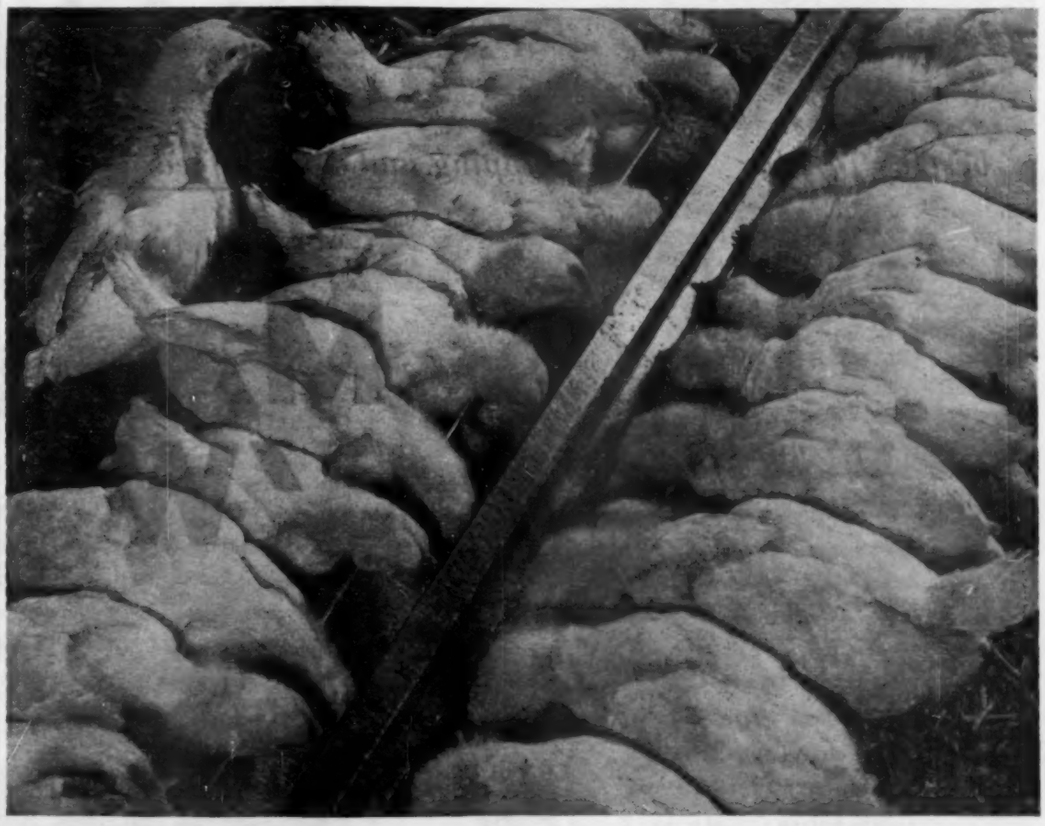

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New Food Preservation Developments Could Affect Feed Industry Markets

PULLMAN, WASH.—Raw meat in a can, sterile milk not pasteurized, shell eggs that will keep indefinitely.

These products of animal agriculture, a packing company scientist predicted recently, can be expected in the future through research work on control and prevention of food spoilage.

The predictions were made by Dr. Herbert E. Robinson, laboratories director for Swift & Co., Chicago, in a talk on new developments in food preservation at Washington State College's recent Beef Cattle Day.

Atomic radiation and antibiotics may revolutionize the entire food industry, Dr. Robinson declared. He went on to explain how these things may be used to control food-spoilage bacteria and thereby curb or prevent spoilage of meat and other foods.

Although Dr. Robinson did not discuss the possible effects of such developments on the feed industry, it can readily be seen that effective food preservation could be reflected in very significant changes in animal agriculture—the feed industry's market.

Methods of production of meat, milk and eggs might change in some way. The volume of production of these products could change in different areas, depending on how new food preservation techniques might change sources of supply of fresh food products for consuming markets. Some new producing areas might be developed; some producing areas might gain new markets or regain lost markets through prevention of spoilage of food shipped over relatively long distances; some producing areas might find output declining in the face of competition from other areas.

Also, new overseas markets for U.S. animal and poultry products might be opened up through preservation of fresh foods.

All of these things—depending on perfection and application of the developments, on the economics of production and transportation and marketing—could have a marked effect on feed production and distribution in the future.

Use of Antibiotics

Discussing antibiotics, Dr. Robinson pointed out that it now appears that they can be used to help keep foods fresh.

So far, he noted, the Food and Drug Administration has approved for commercial use on food one antibiotic, Aureomycin, and this only on poultry. The approval was granted last November. The principle behind the approval, Dr. Robinson explained, was that the tolerance permitted be such that ordinary cooking of poultry destroys the antibiotic. At present that tolerance is seven parts per million.

The Aureomycin is incorporated in the ice slush and used to chill the dressed birds. Dr. Robinson said it is now a commercial practice but is still undergoing evaluation.

He said a vast amount of research is currently under way to establish the usefulness of antibiotics for extending the salable life of beef, lamb, veal and pork.

"We may anticipate that in the not too distant future, antibiotic-treated meats may become available," he said.

Dr. Robinson said there is another interesting scientific finding which may some day be an important factor in the sale of pre-packaged meats. It is still in the laboratory stage, however. This is the possibility of the use of atomic energy for irradiating packaged food products to destroy the bacteria which are the deadliest foe of the entire food processing industry. This process is popularly called "cold sterilization" because it has the power to destroy bacteria without causing any heating of the food product.

The least expensive source of radiant energy as a bacteria killer comes from the gamma rays that are by-products of the atomic pile, Dr. Robinson said. These are similar to x-rays except that they are much more penetrating and powerful.

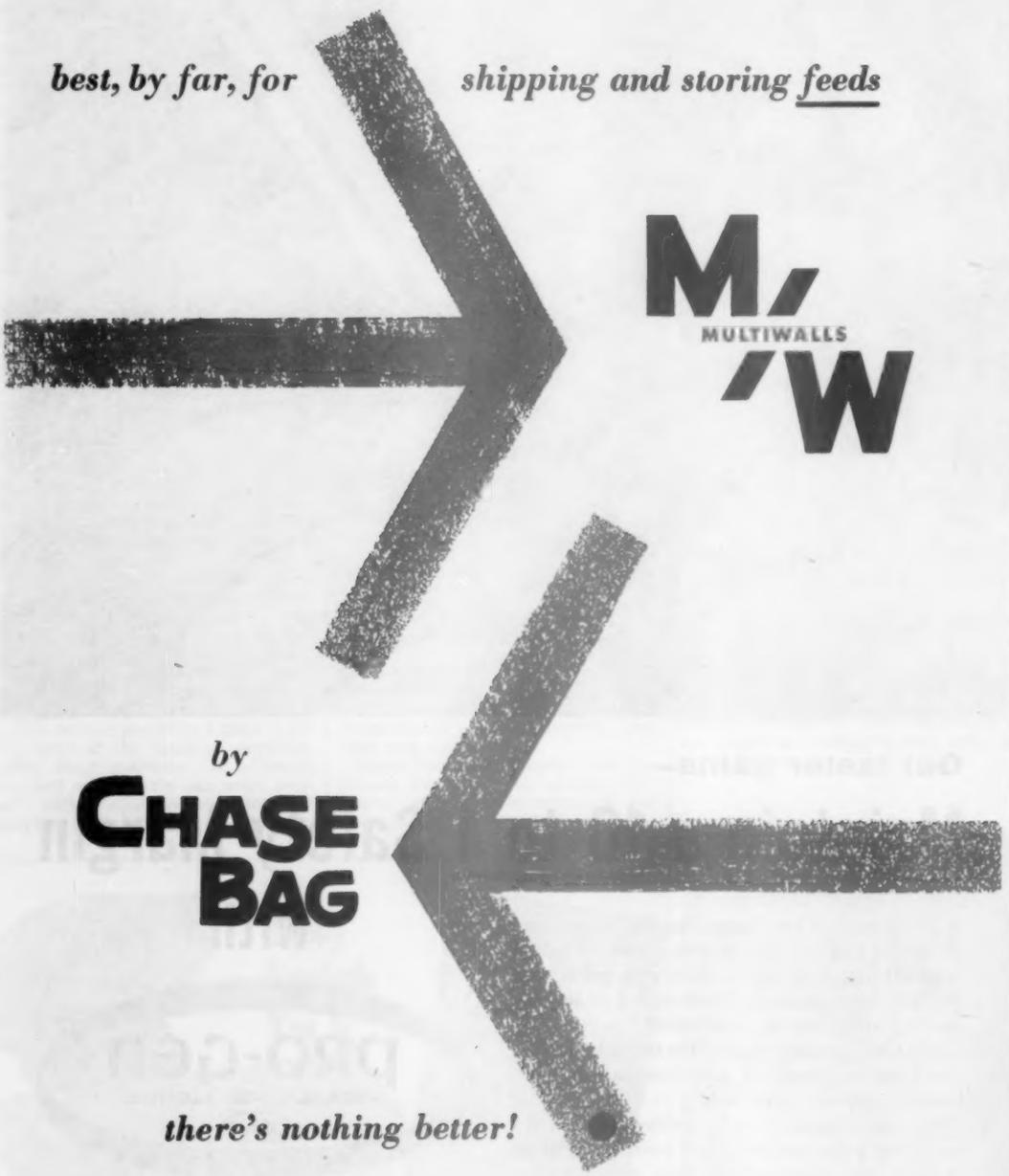
Spent uranium fuel from atomic reactors is the radioactive material which gives off gamma radiation. The radiation kills bacteria that cause food spoilage. Dr. Robinson noted that there is a constant race to see whether the bacteria get the food or whether consumers get to eat it.

He showed the cattlemen a glass jar of raw meat which had been irradiated in December, 1948, and stored at room temperature since. There had been no spoilage and the meat looked fresh because the radiation had destroyed the bacteria present at the time of irradiation and the sealed container had prevented the entry of new ones. The radiation will go right through glass and even metal so that irradiation can be done after packaging; thus the entry of new bacteria can be prevented.

Dr. Robinson predicted that in the future there will be raw meat in a can, sterile milk not pasteurized, shell eggs that would keep indefinitely, bread free of mold, and fruit that would not soften.

However, he said, they are not possible at this time because irradiation produces an undesirable flavor change.

He told his listeners that research is continuing in laboratories throughout the country to find a means of overcoming the difficulty and that it is only a matter of time until the solution is found.



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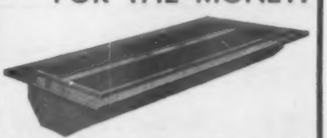

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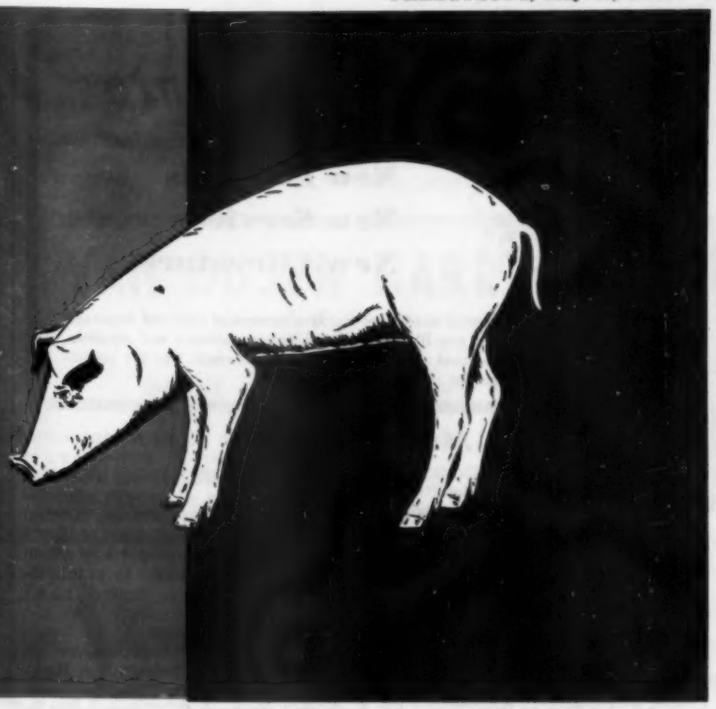

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No. 5464—Fish Meal

New literature is available from Technical Products, Inc., on its Hi-Seas Brand of fish meal, described as a stabilized, antioxidant protected, combination of dehydrated condensed fish solubles and Menhaden fish meal. The following characteristics are claimed for the meal by the company: Highest quality protein, organic and inorganic unidentified growth factors, undamaged by oxidation, B-complex vitamins, essential fatty acids, minerals, free flowing properties, unequaled stability, free from rancidity and improved palatability. Secure the literature by checking No. 5464 on the coupon and mailing it to Feedstuffs.

No. 5467—Poultry Feed Supplement

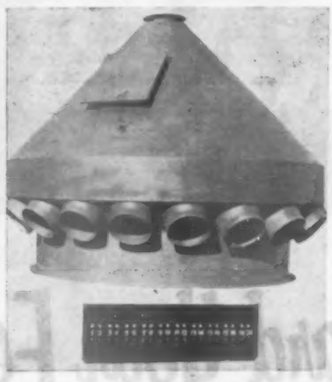
A new poultry feed supplement made from a blend of multiple fermentations has been announced by the feed supplements department of the Borden Company's special products division. Named "Fermacto," the product is now being offered to feed manufacturers. Company officials state that tests have shown that the multiple-fermentation blend produces a consistent improvement in growth and feed efficiency. They say that research has developed a primary fermentation product which exhibits good growth-stimulating properties when added to a corn-soy diet along with vitamin B_{12} and an antibiotic. Their statement continues: "As the research progressed, other fermentations derived from grain and milk sources exhibited similar patterns of growth stimulation. Consequently, Borden's blended these different fermentation products together in varying proportions which were test-fed to chicks in practical-type diets. Results showed that these practical-type diets plus the multiple fermentation blend made for a consistent improvement in growth and feed efficiency." A booklet giving full details on the new multiple-fermentation product can be obtained free of charge by checking No. 5467 on the coupon and mailing it to Feedstuffs.

No. 5465—Barley Sieve

A new barley sieve which is claimed to conform with new barley grades recently announced by the U.S. Department of Agriculture has been brought out by the Burrows Equipment Co. The company's announcement states: "The new grades will affect both feed type as well as malting type barley grown east of the Continental Divide. They will become effective July 1, 1956. Under the new grades, thin barley will be determined by the use of a 5/64x¾ sieve instead of the 4⅝/64x¾ sieve which has been in use to date. The new malting barley grades No. 1, 2 and 3 provide for 7% of thin as maximum for No. 1 malting barley, 10% as a maximum for No. 2 malting barley and 15% as a maximum for No. 3 malting barley through the new sieve." Further information is available by checking No. 5465 on the coupon and mailing it to this publication.

No. 5468—Electric Distributor

An electric bulk materials distributor fitted with a positive electric control panel has been perfected by Hayes & Stolz Industrial Manufacturing Company, Inc. Now being offered for sale, the distributor is recommended for any free flowing material other than liquids, such as is used in the manufacture of formula feeds, grains and fertilizer. Company officials state that "by merely flipping a numbered switch, the operator is assured accurate selection for his distributor setting." Their statement



continues: "An indicator light on the control panel signals when the setting is as directed. Number of openings available number five through 20, and larger. Standard diameters of pipe sizes from 6 in. to 10 in. inclusive, 12 in. and larger can be supplied on request. The company also furnishes extra monitor panels which allow remote supervision. The unit itself is completely self contained, weatherproof and dust tight. It is adaptable for mounting on elevator legs, collectors, under bins, sifters, mixers, screw conveyors and belt conveyors." Secure more complete details by checking No. 5468 on the coupon and mailing it.

Also Available

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No. 5432—Mastitis educational kit, Hess & Clark, Inc.

No. 5433 — Pneumatic unloading system, Sprout, Waldron & Co.

No. 5434 — Antibiotic supplement, Pabst Brewing Co.

No. 5435—Corn shellers, Triumph division, C. O. Bartlett & Snow Co.

No. 5436—Bag opening device, Arkell & Smiths.

No. 5437—Phenothiazine salt, Morton Salt Co.

No. 5438—Antibiotic-vitamin drinking water product for chicks, Dr. Salsbury's Laboratories.

No. 5439—Multiwall bag coating process, St. Regis Paper Co.

No. 5440—Dry flavor ingredient, Taste Engineering, Inc.

No. 5441—Nomograph showing losses from feed overfortification, Omega Machine Co., division of B-I-F Industries, Inc.

No. 5442—Feeding and management guide, Swift & Co.

No. 5443—Grain fumigant, Stauffer Chemical Co.

No. 5444—Self-unloading bulk feed body, Highway Equipment Co., Inc.

No. 5445—Urea and minerals mixing, Omega Machine Co., division of B-I-F Industries, Inc.

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No. 5458—Moisture controller, Quaker Oats Co. and Fielden division of Robertshaw-Fulton Controls Co.

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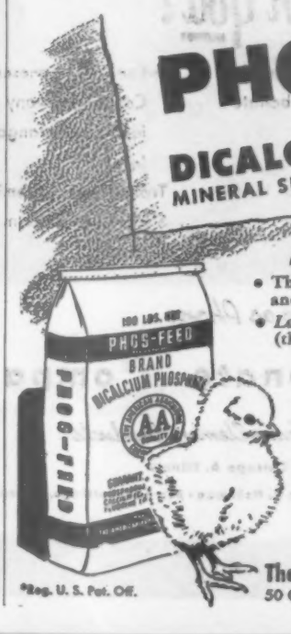

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Spotted Alfalfa Aphid

. . . a threat to alfalfa

By Joseph Chrisman

EDITOR'S NOTE: The serious threat to alfalfa posed by the spotted alfalfa aphid has been recognized by directors of experiment stations in the Midwest and U.S. Department of Agriculture personnel. At a gathering of these people recently, methods of controlling the insect were discussed. The accompanying article, by Joseph Chrisman, executive vice president of the American Dehydrators Assn., is a report about research on these control methods and their effectiveness.

v v

The spotted alfalfa aphid is by far the most serious threat to the alfalfa growers of the U.S. that has yet come along. It is predicted by people who should know that it will, within a matter of three years or so, be nationwide. The seriousness of the problem led the directors of a number of experiment stations of the Midwest to join in calling a meeting of entomologists and agronomists in Kansas City April 30 to conduct a seminar or research roundup on the spotted alfalfa aphid.

Approximately 35 people gathered around the table in Kansas City. They came from Arkansas, Iowa, Kansas, Nebraska, Missouri and South Dakota. Dr. R. E. Hill, chairman of the department of entomology at the University of Nebraska, acted as chairman. Dr. Hill was relieved in the afternoon session by Dr. D. E. Howell, head of the department of entomology at Oklahoma A&M College. Assisting these chairmen on agronomic phases and matters of procedure was Dr. Elvin R. Frolik, former chairman of the agronomy department and now associate director of the experiment station at the University of Nebraska.

In addition to the various technical people from the colleges and experiment stations, the Agricultural Research Service of the U.S. Department of Agriculture was well represented by midwestern workers and people from Washington, D.C., and Beltsville, Md. Among these latter were Dr. R. G. Dahms of the cereal and forage insect section, Dr. T. R. Gardner of the biological control section, and Dr. Hugo Grauman, research agronomist of the forest and range section.

The dehydration industry was represented at the conference by Joseph Chrisman, executive vice president of the American Dehydrators Assn., the only industrial representative at the conference.

The primary purpose of the conference was to pool information concerning the spotted alfalfa aphid and to attempt to coordinate the research being done by the experiment stations and USDA agencies in the interests of greater effectiveness.

Ultimate Control Discussed

The discussions centered around the ultimate control of the insect rather than immediate relief measures—not that immediate measures are not needed, nor that they would prove entirely ineffectual. Instead, the consensus of expert opinion seems to be that presently known control procedures can only do a localized service whereas the broad picture demands much more study before means can be devised to stop the spread or eradicate the pest.

This does not mean that state entomologists or USDA personnel at state experiment stations are not going to cooperate with alfalfa growers fully. They most certainly have and will continue to give all the advice and aid at their command to help on a local level.

Control of the spotted alfalfa aphid in local areas is possible and has been attained in some instances, though at a considerable cost to the grower.

Irrigation of the fields is of much value in pursuing such a course. There are probably two factors involved there: first, if the alfalfa plant has ample moisture for rapid growth, assuming good fertilizer practices have been used, the plant can apparently outgrow the aphid to some extent; second, the aphid thrives best in arid or semi-arid environment and the higher humidities existing even temporarily in irrigated fields tend to discourage the pest.

This is not to say that irrigation or rainfall alone will provide effective control. It will, however, be of benefit in conjunction with insecticide applications.

Fair control on first cutting alfalfa in local areas has been attained in the total absence of irrigation but at a cost approaching the limits of the economy.

Stressed was the long range value of finding varieties of alfalfa of high resistance to the depredations of this particular insect.

At present there is but one variety of any commercial significance which has shown a consistent resistance to injury from the aphid. That variety is Lahonton, developed in Nevada for

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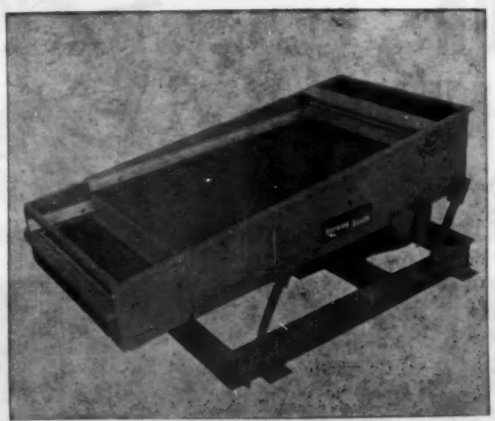

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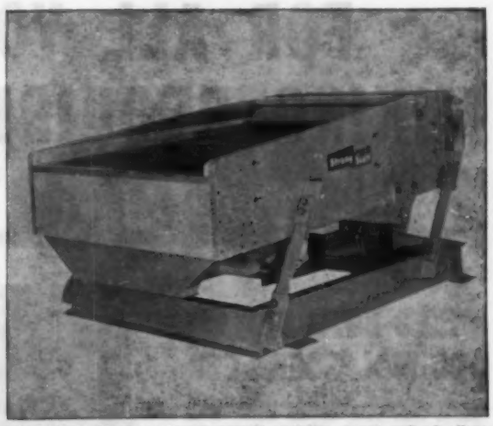

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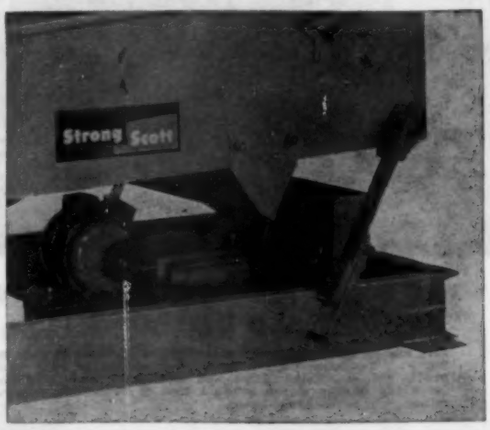

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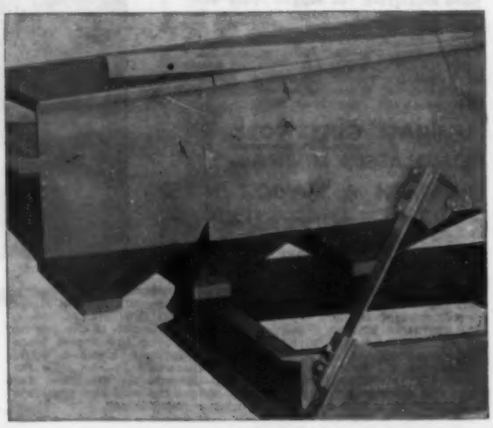

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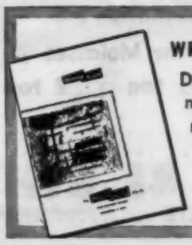

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Unfortunately, or so it seems, the seed increase program for this variety was planned in 1954 and 1955 to make seed available only to such areas as were plagued by stem nematode. These areas were relatively small and confined to portions of Nevada, California and Oregon. Thus, Lahonton was not developed for, and is not well suited to, the climatic conditions prevailing east of the Rocky Mountains, nor is seed now available in quantities to do any good in midwestern areas. More seed will be available for wider distribution in the far West next year.

The five parents of Lahonton are being tested separately for their resistance to the aphid and new combinations of these clones with others of a type more adaptable to the Midwest and other areas are being developed.

Insecticides

Another phase of the research program will be along the lines of finding new and more effective insecticides. An outstanding difficulty with present materials such as malathion and parathion is their ineffectiveness at lower temperatures. Spring weather in the midwestern states is well known for its wide fluctuations in temperature. Days and weeks of mild or even hot weather may be experienced very early followed by further days or weeks of temperatures reaching the 20's or 30's. The false spring will bring out new growth on alfalfa, giving the aphid a good feeding ground. She goes to work on the foliage and starts that fantastic reproduction cycle. At about the proper time to spray the field, along comes that delayed winter period during which spraying is of little value, i.e., at temperatures below 60° F. And even though it warms up, March and April winds may make aerial applications unfeasible and ground spraying of dubious value. But, while retarded some by temperature, the aphid goes right on feeding and multiplying.

It is during this period of the year, or early growth in the spring, that the flaming of fields might be of greatest value. The agronomists point out, however, that repeated flaming of the growing plant will eventually weaken the stand through the sapping of root reserves. As the alfalfa plant grows and until it reaches late bud or very early bloom stage, it is constantly calling on the root reserves. Beyond that stage it is replenishing those reserves in anticipation of the second growth. To disturb that cycle too drastically during the early growing stages is likely to weaken the plant.

Systemic Insecticides

Another possibility discussed at this conference was the use of systemic insecticides. Such compounds would be used to treat the alfalfa seed before planting. Some have been developed which have the ability to ward off or inhibit aphid damage for a period of three to five weeks after emergence of the plant, thus giving it an opportunity to outgrow the aphid and make a first crop. Such insecticides are not yet commercially available and even if they were there would be danger in using them because of the unknown toxic residue factors.

More studies must be conducted to determine if potency of toxic residues is sufficient to endanger livestock to which the harvested product might be fed.

Such a systemic insecticide would happily circumvent the vagaries of temperature fluctuations or adverse winds which now limit the use of the external applications and would be less destructive towards parasites and predators occurring in the fields.

Predators

This insect has, no doubt, been held within due bounds in its native habitat by naturally occurring predatory insects, parasites or fungi diseases of the regions. Predators and parasites offer some hope to the alfalfa grower in the U.S. USDA is rounding up predators and parasites from various parts of the world, increasing them at several stations and putting them out for experimental use under controlled conditions to obtain an answer as to usefulness in attacking this spotted alfalfa aphid problem. Certain fungi are also being tried out in a similar manner. Of course, further studies must be made of the biology of the insect and of its ecology.

Tentative plans were evolved at the conference for the possible continuation of the group as an organized body with eventual additions from other interested states or areas. This would be an eventuality greatly to be desired by the alfalfa growers of the country.

One phase of research which could very properly be given consideration by the alfalfa dehydration industry is that of pesticidal residues in dehydrated products from fields treated with the various pesticides. It is reasonable to suppose that disappearance is greater at the elevated temperatures of dehydration but until proof is forthcoming, the so-called Miller amendment stares in the face of the seller of such products.

Harvey Steen

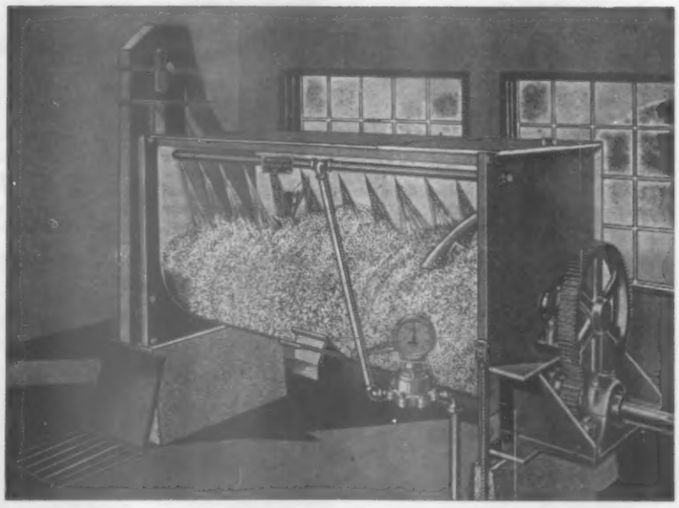
JOINS PENB—Harvey Steen, who served with the American Dairy Assn. in Chicago the past four years as office manager, production manager and member of the merchandising department, has joined the staff of the Poultry & Egg National Board as director of the division of state PENB services. He will be liaison man between PENB and the state PENB committees. Immediately prior to 1952 when he affiliated with the ADA, Mr. Steen served five years as advertising manager with Booth Fisheries Corp., Chicago. Before that he was with National Tea Co. for 13 years, six years as advertising manager. Mr. Steen is a graduate of Northwestern University. He lives with his family in Elgin, Ill.

HERE'S ONE MIXER FOR ALL YOUR MIXING REQUIREMENTS

MIX WITH A *Marion* MIXER!

MIXES BOTH DRY AND MOLASSES FEED

Marion Molasses Equipment, easily installed with your Marion Mixer, is of the simplest, most efficient design for thoroughly impregnating dry materials requiring any percentage of molasses. Outstanding design features of the Marion Molasses equipment are: The spray manifold that runs the entire length of the mixing cylinder for complete saturation, the rugged "gear within a gear" rotary pump that handles liquids of the highest viscosity, and the molasses meter that registers exactly the amount required for the formula—(NO MORE . . . NO LESS!) then keeps a cumulative record for you, if desired, of pounds of molasses or oil used by the day, week, month or year.



ELIMINATE GUESSWORK IN MOLASSES MIXING— MIX WITH A MARION MIXER

CONSTANT UNIFORMITY BAG AFTER BAG

Proved to be one of the highest efficiency mixers in the industry, through the most exhaustive laboratory tests, the Marion Mixer is still one of the lowest priced mixers on the market today. The exclusive Marion Mixing and Blending Action is the key to its efficiency because through its design, even the barest trace materials can be thoroughly and completely blended while simultaneously being cross-blended constantly in the mix for assured formula uniformity. Marion Mixers are designed for even the most rugged feed mixing operations and are available in various sizes suitable for any mixing requirement.

NO DOUBT . . . NO GUESSING! FOR FEED UNIFORMITY

Stop adding the unnecessary ingredient of "Doubt" to your mixing . . . day after day. Instead, start adding to your mixing profits with a Marion Mixer and Marion Molasses Equipment for a top quality mixed product that is absolutely uniformly mixed . . . batch after batch.

Now Available!

A complete descriptive catalog of the Marion Mixer and accessory line.

SEND FOR YOURS TODAY!

Manufactured by

RAPIDS MACHINERY COMPANY
887 11th Street MARION, IOWA

FILL OUT AND MAIL TODAY!

RAPIDS MACHINERY COMPANY 887 11th St. Marion, Iowa

Please send us prices and information on:

MARION MIXER — Dry ☐ or Molasses ☐

☐ ½ ton ☐ 1 ton ☐ 1½ ton ☐ 2 ton

MARION FINISHER: ☐

NAME .....

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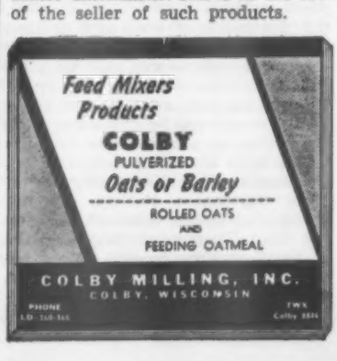
CITY ..... STATE .....



NO SLIPPING!

With this new SAFE-STAK PAPER, upon which this advertisement is printed . . . SAFE-STAK, as an outer ply on your feed bags, insures protection against slipping in handling, storage and transit.

SAFE-STAK is a new development in modern feed bag handling methods, and is immediately available both in White and Natural.

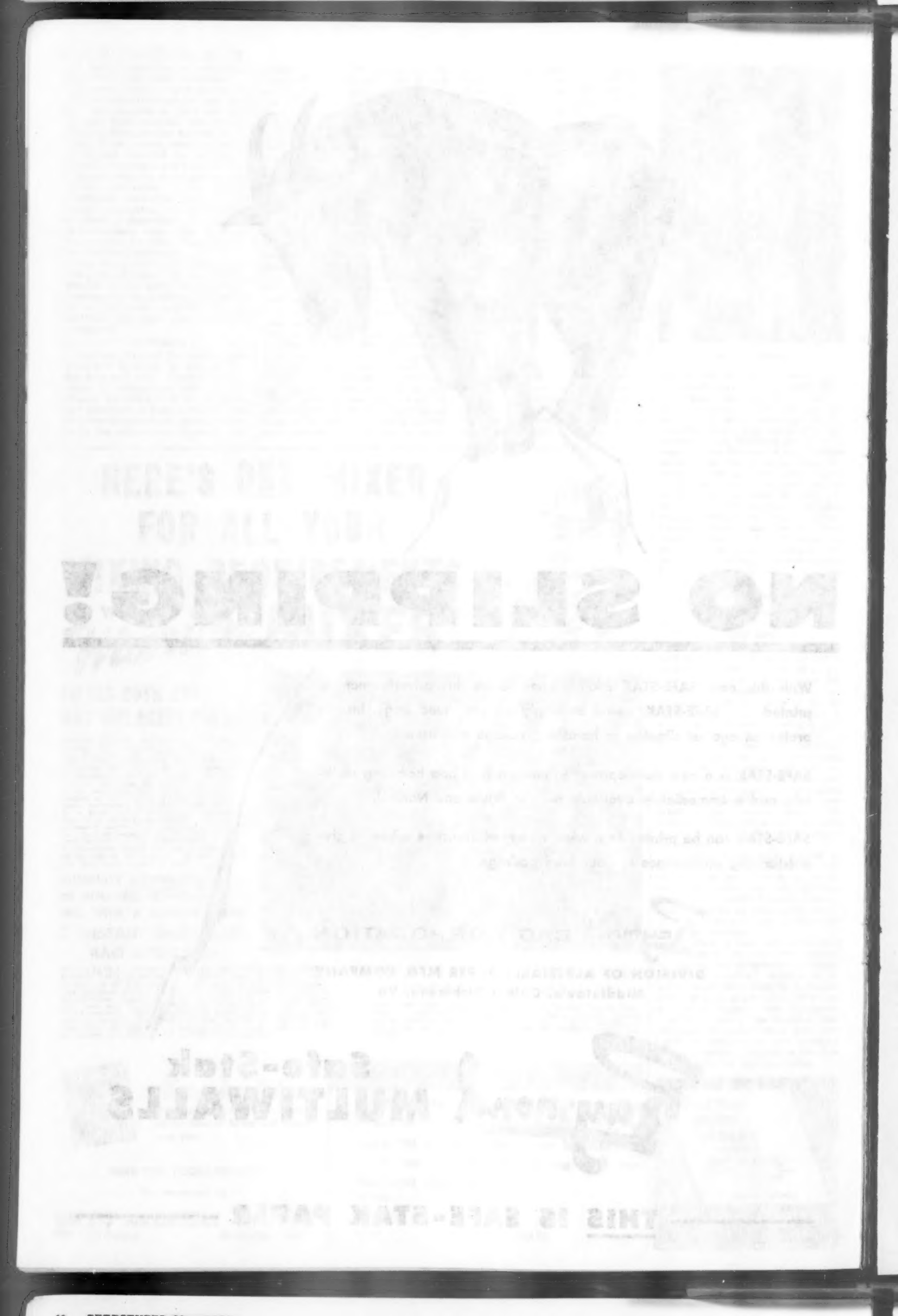
SAFE-STAK can be printed in a wide variety of attractive colors, to give outstanding appearance to your feed package.

Raymond BAG CORPORATION

DIVISION OF ALBEMARLE PAPER MFG. COMPANY
Middletown, Ohio • Richmond, Va.

Raymond **Safe-Stak MULTIWALLS**

THIS IS SAFE-STAK PAPER



Ask the MERCK MAN

Whether it is a problem in mixing microingredients or giving your formulation the advantages of recent discoveries, the Merck man is a good man to know. He can place at your disposal Merck's vast research and production facilities—and hundreds of man-years of technical service experience in dealing with micronutrients and therapeutic agents in feeds. Get the Merck man in on your problems the next time he calls, or contact him through the Merck sales office nearest you.

ATLANTA • BOSTON • CHICAGO • DALLAS
KANSAS CITY • LOS ANGELES • MINNEAPOLIS • NEW YORK
PHILADELPHIA • ST. LOUIS • SAN FRANCISCO

Rations Fed During Periods of Stress Need Higher Vitamin Content

Moving, debeaking, pelleting, vaccination, parasites, extremes and sudden changes of temperature, disease symptoms like fever, diarrhea and poor appetite—all these situations increase the vitamin requirements of poultry. Any high-level antibiotic ration used to guard health during stress should contain therapeutic vitamin levels . . . especially the B vitamins in amounts several times those supplied by regular well-formulated feeds.

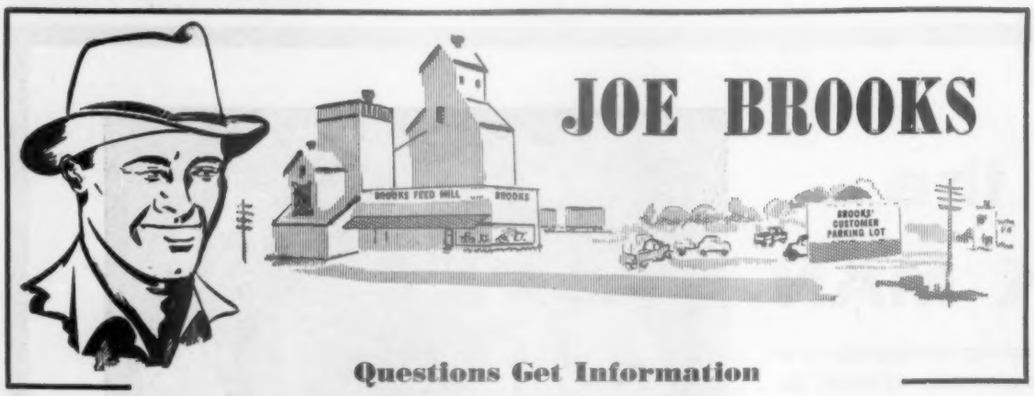
If you are marketing antibiotic *stress* feeds, you may want to review their vitamin content with your Merck man. He can help you pick, from a wide variety of Merck Vitamin Mixtures, the product best suited to your needs.

MERCK PRODUCTS
FOR THE FEED INDUSTRY

PRO-PEN® "4"
PRO-PEN® with B_{12} "2.3"
PRO-PEN® "50%"
SULFAQUINOXALINE
S.Q.® "25%" PREMIX
NICARBAZIN MIXTURE "25%"
NIACIN U.S.P.
DRY MIXTURE CHOLINE CHLORIDE
SOLUTION CHOLINE CHLORIDE
DL-CALCIUM PANTOTHENATE—CALCIUM CHLORIDE COMPLEX
NO. 525—CALCIUM PANTOTHENATE MIXTURE
NO. 54—RIBOFLAVIN MIXTURE
NO. 76—MENADIONE MIXTURE
POTASSIUM IODIDE MIXTURES
POTASSIUM IODIDE FREE-FLOWING POWDER
VITAMIN B_{12} SUPPLEMENT "6"
VITAMIN B_{12} SUPPLEMENT "20"
MULTIVITAMIN MIXTURES FOR FEED USE
STREPTOMYCIN SULFATE ORAL VETERINARY (POWDER)

Research and Production for Better Poultry and Animal Nutrition

MERCK & CO., INC.
Manufacturing Chemists
RAHWAY, NEW JERSEY



Questions Get Information

Butterball Barlow was the youngest of Joe Brooks' employees, the one most addicted to sweets which gave him too many pimples, and he was also the most bashful. When in the presence of a girl his tongue always got hogtied and he couldn't say a thing. But he was a likable fellow at that, had a good business head and was forever reading newspapers, comic books, science magazines and also agricultural papers. His secret ambition was to own a feed mill some day, but he had never breathed a word of this to anyone.

Now, during a period when rain slowed down trade, Butterball walked into Joe's office, a clipping in his hand.

"Need any more ideas, Joe?" he said. "Or is the budget stretched to the limit?"

The brown haired feed dealer smiled and leaned back in his swivel chair. "No business man wants to spend a cent more than he has to, Butterball. He likes to hold expenses down to a minimum—he's got to if he wants to make a profit. But every business man knows, too, that he sometimes has to spend money to make money. Shoot. What's your idea?"

Butterball grinned and sat down in a chair, the newspaper clipping dangling from his fingers. "I ran across an idea in a city paper," he said, "and I think we can use something like it out here in the country."

"What is it?"

"It's a column called The Inquiring Reporter," said Butterball. "Now, why couldn't we have an ad column like that, separate from our display advertising, and call it Farm Problem of the Week?"

Joe was quiet for a moment, as he mentally digested the idea. Then his eyes lighted with interest. "Go on, Butterball, tell me more about it."

Question from Five Farmers

"Well," said the young employee, "I thought we could ask one question of about five farmers every week. We could get their answers, take a bust picture of each and print it along with their replies."

"I can see how it could be done," Joe admitted. "We have our own camera and could take the picture. And now, with these inexpensive plastic engravings suitable for newspaper work, it wouldn't run the illustrating costs up very high. But what kind of questions would you ask the farmers?"

"I thought quite a bit about that," Butterball admitted. "Maybe we could use questions such as, 'What do you think are the most important steps in producing quality milk?' and 'How

ALFALFA BULLETIN:

Experts Predict 50% Crop Loss Unless Dehydrators Spearhead Community-Wide Spray Programs to Control Spotted Alfalfa Aphid

HALF THE ALFALFA CROP CAN BE LOST

without insecticides such as parathion. As much as one acre of alfalfa in every two will be lost in some areas in 1956, experts predict, unless spraying of fields on a community scale is used to control the spotted alfalfa aphid. Dehydrators are being urged to organize and supervise aphid control programs in their communities.

WHY ALL ALFALFA FIELDS MUST BE SPRAYED

Winged adult aphids are capable of traveling great distances. Unless *all* fields in a growing area are sprayed, aphids from the few unsprayed fields will soon cause major reinfestation. Halfway spray control is almost as bad as none.

WILL NATURE CONTROL THE APHID WITHOUT PARATHION?

Long periods of high humidity—not likely this year for the alfalfa areas—will slow down the spotted aphid. Only one variety of alfalfa is resistant to the aphid but at present this legume is adapted to only a few small sections. Natural parasites—in some cases more potent than insecticides—appear to be *unable to control* spotted aphid populations!

WHY PARATHION OFFERS BEST APHID CONTROL

Parathion is the aphid spray most used by custom sprayers because it gives (1) the most complete and effective kill at (2) the *lowest* cost per acre. Spray costs generally range between $1.75 and $2.25 an acre for all labor and materials. Parathion offers instant killing power that assures thorough first kill and minimum re-spraying to bring aphids under complete control.

HOW TO GET PARATHION APHID CONTROL INFORMATION WITHOUT DELAY

Alfalfa dehydrators and growers seeking specific information about the use of parathion for the control of spotted aphid, should contact their county agent, custom applicator or other competent local agricultural authority.

For informative folder on the safe handling of parathion, most effective of all known insecticides against the alfalfa aphid, write: MONSANTO CHEMICAL COMPANY, Organic Chemicals Division, St. Louis 1, Mo.

MONSANTO®

FGC FEEDS

DEHYDRATED BREAD MEAL

Regular Supply All Year Around

Let us know your requirements and we will be glad to quote you

GREENPORT FEED CORP.
548-544 Morgan Ave.
BROOKLYN 22, N. Y.
PHONE EV-8-0126

HERE ARE THE OBVIOUS and CONTINUING REASONS for

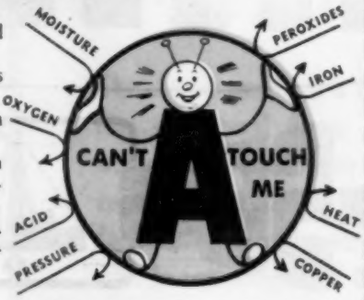
PERMADRY*

*U.S. Patent No. 2496634 Reg. T.M.

SUPERIORITY

1. STABILITY OF VITAMIN A

- PERMADRY Vitamin A stability is unsurpassed by any other form of Vitamin A used in feed.
- Carry-through Vitamin A stability in regular feeds is excellent under all prevailing adverse conditions.
- Carry-through Vitamin A stability is maintained in pellets, crumbles, cubes, and even in biscuits.
- Carry-through Vitamin A stability has been proven in mineral mixes and highly mineralized feed concentrates.
- PERMADRY also protects ingested Vitamin A against destructive elements in the upper gastro-intestinal tract.



ALL WARDED OFF BY PERMADRY

2. BIOLOGICAL SUPERIORITY

Published papers from leading University Experiment Stations emphasize the following advantages of PERMADRY:

- Improved growth rate and feed efficiency.
- Reduced mortality due to increased resistance to stress factors.
- Increased Vitamin A storage in the livers.
- Increased egg production.
- Increased biologically-active Vitamin A reserves in the egg.

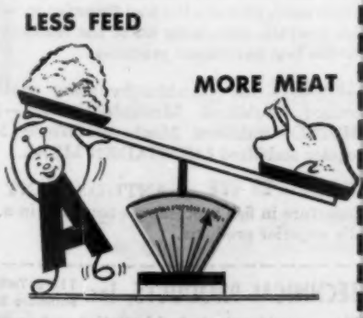
All the above results were demonstrated versus commonly used alternate Vitamin A materials.

See Poultry Science Vol. 34, 1955—p. 942, p. 1125 and p. 1134; also Vol. 35, 1956 (in press).

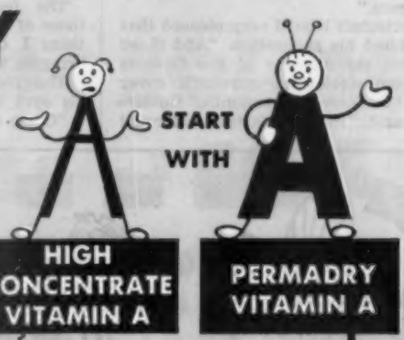
AVAILABILITY

3. IMPORTANCE OF THE CONCENTRATION OF VITAMIN A-ACTIVE MATERIAL IN WHAT YOU BUY.

- The Vitamin A furnished by PERMADRY is contained in digestible oil-soluble "beads" uniformly fortified with Vitamin A to levels of about 40,000 units per gram. PERMADRY will furnish 5 to 10 times respectively, more Vitamin A "bead material" (Vitamin A-Active) per ton of feed than will high concentrates of 250,000 to 500,000 units per gram when added to feeds to supply the same desired vitamin A unitage.
- PERMADRY supplies this greater amount of Vitamin A-active material without the need for prior pre-mixing on your part. This relieves you of the otherwise mandatory rigid uniformity control of pre-mixes.
- PERMADRY has refused to economize at your expense in furnishing you with a half-way product . . . one which you have to complete by blending down to practical use levels, with you yourself having to assume the full responsibility for the pre-mix.



ECONOMY



REQUIRED PREMIXING

WHAT FILLER?
WHAT MIXER?
HOW LONG?
UNDER AIR?

ANALYTICAL CHECKING?

UNIFORMITY CONTROL?

ADJUSTMENT OF POTENCY?

FILLING, WEIGHING, & BAGGING

SETTLING A PROBLEM?

PACKING UNDER INERT GAS?

VITAMIN STABILITY AFFECTED BY YOUR OPERATIONS?

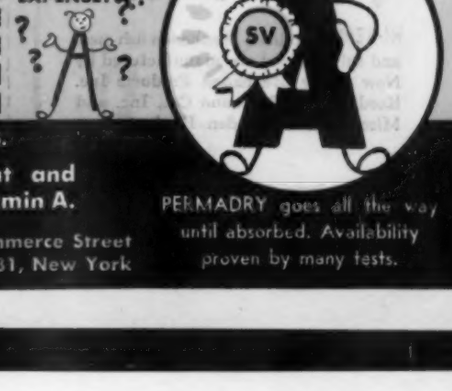
MANUFACTURER'S GUARANTEE?

% VITAMIN A-ACTIVE MATERIALS?

READY TO USE?

PERMADRY TRAVELS AN UNINTERRUPTED DIRECT PATH FROM BASIC MANUFACTURER TO USER . . .

ECONOMY AT WHOSE EXPENSE?



PERMADRY goes all the way until absorbed. Availability proven by many tests.

A STRAIGHT LINE IS STILL THE SHORTEST DISTANCE BETWEEN TWO POINTS.

*PERMADRY is the only product which furnishes high energy fat and Vitamin E at no extra cost along with the guaranteed amount of Vitamin A.

STABILIZED VITAMINS, INC. 57-59 Commerce Street Brooklyn 31, New York

big do you think the average dairy herd should be to hold down labor costs?' Then once in a while we could slip in some questions such as 'When should a farmer retire?' 'How can we keep more young folks in farming?' There really would be no end to the questions we could ask, Joe. I'll bet the county agent would be glad to give us some questions to use, too."

By this time Joe was smiling broadly. "I like your idea, Butterball. It is something different and it would attract much attention. Farmers would learn to look for it every week, and it certainly would give us much extra advertising. Besides, through the answers to those questions, we would be learning a great deal about how farmers think on certain questions. That's valuable for our selling program."

Butterball looked very pleased that Joe liked his suggestion. "And if we publish the pictures of five farmers in each week's column we'll cover about 22 farmers per month," Butterball said. "In a year's time we could really get quite a bit of coverage on our customer's list."

"That's true," Joe said, "and this is the sort of advertising feature which we can work up one to three weeks in advance, isn't it?"

"I didn't figure it out that far," admitted Butterball, "but there isn't much of a time limit on the questions, so we could prepare the volumes some weeks in advance. That feature would help out especially when we get rushed, won't it?"

Joe nodded. "Butterball, the more I think about this idea of yours the more I like it. I am sure no other advertiser in this town has used it yet, and no one will dare to copy it, at least so long as we keep running it, will they?"

"That's right," Butterball declared.

The feed dealer's eyes searched those of his employee. "Is there anything I can do to reward you for bringing this idea to me, Butterball?"

The young employee blushed and his eyes were downcast.

"Come on, tell me," Joe urged. "If your price is too high, I won't pay it, but I'm a fair man. You know that."

Butterball looked very miserable. "Oh, Joe," he said. "I got myself into a terrible jam—with a girl."

Joe's face paled and his eyes dilated.

Butterball's In Trouble

"Trouble with a girl!" he echoed. "Oh, no, Butterball."

Now it was Butterball's turn to be alarmed. "I—it's not that kind of trouble, Joe," he said quickly. "Honest. Oh, gosh, gee, you didn't think—"

"Well, what kind of trouble is it?" asked Joe, a little sternly.

Butterball flushed a deeper red. "Y—you know how bashful I am with girls, Joe. W—well the other day I met a nice farm girl at Happy's lunch. She lives out on Highway G about three miles. I couldn't keep my big mouth shut—she looked so nice to me—a-and so I asked her for a date—tonight."

Joe smiled. "Well, what's so bad about that?" he asked.

"I—I just happened to think today, Joe. I haven't got a car. I don't mind walking three miles out there to her place—but when I get there where the heck will I go? I—I can't take her any place."

"And so—" Joe was way ahead of Butterball in thinking.

Butterball blushed again. "I—I was just thinking, Joe, that maybe you could help me out just this once. If you do, I'll never be fool enough to ask a girl for a date again."

"How can I help you out, Butterball?"

"Well, you know how girls are nowadays. They want a fella to take them some place like to a show or a dance, and then maybe buy them an ice cream sundae. If—if you could let me use the light feed delivery truck tonight, maybe I could take Susie out and she'd be happy."

Joe began to laugh. "So that's it, Butterball. You want to use the truck. Well, my insurance covers my employees, too, but I never thought the truck would be used for this kind of delivery. However, I don't want you to make a practice of borrowing the truck to take girls out, Butterball, but this once it's okay. But for goodness sake, don't be a one-arm driver. That Highway G has some winding turns."

"Me, a one-armed driver!" ejaculated Butterball. "I wouldn't dare. I'll bet she'd slap me."

HI-SEAS BRAND

MENHADEN PRODUCTS

STABILIZED MENHADEN MEALS
ELIMINATE THE VARIABLES

NOW AVAILABLE!
After many months research
HI-SEAS BRAND stabilized
Menhaden whole meal
(Stabilized Menhaden Fish Meal with 40% Condensed Fish Solubles Added

✓ 1. Highest quality protein.
✓ 2. Organic and inorganic unidentified growth factors.
✓ 3. Undamaged by oxidation.
✓ 4. B-complex vitamins.
✓ 5. Essential fatty acids.
✓ 6. Minerals.
✓ 7. Free flowing properties.
✓ 8. Unequaled stability.
✓ 9. Free from rancidity.
✓ 10. Improved palatability.

HI-SEAS stabilized Menhaden fish meal and fish solubles are manufactured by New Jersey Menhaden Products Inc. Reedville Oil & Guano Co., Inc. and Mississippi Menhaden Products Inc.

Get these advantages—you've always wanted—by using Hi-Seas Brand—a stabilized, antioxidant protected, combination of dehydrated condensed fish solubles and Menhaden fish meal. Stabilized Menhaden whole meal, provides the feed formulator, with a single fish product, containing all of the features necessary for the best nutritional practices.

ELIMINATE the variables by using quality standardized, stabilized Menhaden meals—HI-SEAS BRAND—stabilized Menhaden Whole Meal and regular stabilized MENHADEN MEAL.

THE PROPER USE of ANTI-OXIDANT is a new departure in fish processing—resulting in a nutritionally superior products.

TECHNICAL PRODUCTS, Inc. 114 E. York St. Baltimore 30, Md.
Please send me technical bulletins and complete information.
Name_____
Address_____
City_____ State_____

HI-SEAS STABILIZED MENHADEN WHOLE MEAL distributed exclusively by TECHNICAL PRODUCTS, Inc.

New Canadian Plant Opened

GUELPH, ONT. — United Cooperatives of Ontario recently opened a new $600,000 feed manufacturing plant here.

The new mill, considered one of the most modern in Canada, replaces two existing plants in Guelph, both of which were regarded as outmoded because of increased demand for feed in the region.

The new plant will serve 72 cooperatives in southwestern and northern Ontario. With a 24-hour capacity of 400 tons, the mill almost doubles the capacity of the two old Guelph plants.

Included in the plant is a laboratory where incoming ingredients will be checked. The same laboratory will also check Co-op feeds made at other plants at Kempville and Peterboro and the 135 affiliated Co-op feed mills.

Most of the feed ingredients are received in bulk and unloaded into storage bins by a pneumatic unloading system. The ingredients go to one of 64 steel bins that have capacities of 10 to 75 tons.

Below the bins is a 2-ton scale that is loaded every three minutes and discharged into one of the 2-ton mixers. The mixers have special equipment so that fat can be added by air pressure.

In the basement of the mill are storage tanks for molasses and fat and the grinding equipment.

The packaged finished feed is conveyed to a large circular steel turntable on the second floor, and from there it is placed on pallets in the shipping warehouse. Feed is then moved to the loading platforms.

The warehouse consists of three floors with a total area of 48,000 sq. ft. The basement area of the warehouse is used for certain feed ingredients, such as fish meal, meat meal, dehydrated alfalfa and dehydrated cereal grass.

The grain storage facilities consist of 12 concrete silos with a total capacity of 84,000 bu. Storage for soybean meal is in steel tanks inside the plant.

The manufacturing facilities provide for the making of all forms of feeds for cattle, hogs and poultry.

Head office for the cooperative's feed program is in Guelph, with A. O. Walberg as manager.

Now You CAN Afford to Use Quality Flavors!

NOW **DOUBLE STRENGTH**

- Anise Compound
- Anise-Fenugreek
- Anise-Licorice
- Anise-Molasses
- Dog Food Flavor
- Fenugreek
- Molasses Extender
- Pig Feed Flavor
- Poultry Feed Flavor

SPECIAL FLAVORS
developed to
meet your
requirements

Tastelation LIQUA-SOLIDS at SAVINGS of 50%!

The development of a new exclusive MICRO BASE as a carrier of natural flavor compounds means a real savings of about half your former costs. Use HALF as much per ton in replacing dry flavor products in formula feeds and mineral feeds for even greater effectiveness. Use a pound for each pint in replacing most liquid compounds.

DOUBLE STRENGTH FLAVORS WITH THESE DEFINITE ADVANTAGES

- ★ Better stability—Greater aroma release—Sugar free—Non-caking
- ★ No separation when mixed
- ★ Perfect handling at 20° below zero
- ★ Does not absorb moisture
- ★ Eliminates troublesome liquid handling
- ★ Reduces storage
- ★ Saves on freight

FREE SAMPLES

Write for free samples of flavors you are interested in for complete information on prices and use rate

★

Let Our Research Department **assist you on flavor-aroma problems for formula feeds, mineral feeds, medicated products, pharmaceutical and veterinary products**

Taste Engineering, Inc.

MANUFACTURERS . . . . . IMPORTERS . . . . . DISTRIBUTORS

1401 WEST HUBBARD STREET CHICAGO 22, ILLINOIS MONROE 6-5255

Dairy Support Rates Hiked; USDA Reviews Sales, Purchase Program

WASHINGTON—Ezra Taft Benson, Secretary of Agriculture, increased dairy support prices to 58.6¢ lb. of butterfat and $3.25 cwt. of manufacturing milk for the 1956-57 dairy marketing year which runs through March 31, 1957.

This followed the President's statement that prompt administrative action would be taken to improve farm income.

Commodity Credit Corp.'s buying prices are upped by two cents lb. on butter and 1¢ lb. on cheese, for products produced on or after April 1, 1956. These increased buying prices will enable processors to increase prices paid to producers by 10¢ cwt. of manufacturing milk, and 2.4¢ lb. of butterfat. Purchase prices of nonfat dry milk solids are not being changed.

The support prices are increased from $3.15 cwt. of manufacturing milk and 56.2¢ lb. of butterfat in farm-separated cream. The new support prices represent 84% of the parity equivalent price of manufacturing milk and 81% of the parity price for butterfat as of March 15, 1956.

The USDA recently reported dairy price support activity for March, 1956, and issued a preliminary summary of dairy price support activity for the 1955-56 marketing year which ended March 31.

The 1955-56 marketing year was marked by the continued heavy movement of butter out of the Commodity Credit Corp. inventory and by a reduction of slightly more than 15% in butter purchases from the previous marketing year's total. As a result of these two factors, the uncommitted stocks of CCC-owned butter dropped to zero in mid-March and stayed there through the remainder of the month. For the first time since 1953, dairying heads into the flush milk season with no overhang of government-owned butter bought in previous years.

This does not mean, however, that butter is no longer in surplus supply, USDA says. Price support purchases of butter are still being made in sufficient volume to meet current export and domestic sales, and donation and other special program needs. In addition, purchases probably will step up in coming weeks as milk production moves toward the seasonal high.

Purchases Listed

During the 1955-56 marketing year, purchases amounted to 177.9 million pounds of butter, 157.4 million pounds of cheese and 624 million pounds of nonfat dry milk solids. These compare with 1954-55 marketing year purchases of 210.5 million pounds of butter, 153.3 million pounds of cheese and 532.2 million pounds of nonfat dry milk solids.

During the marketing year just ended the nonfat dry milk inventory continued at a low level despite a marked drop in purchases.

In March a total of 1,500,647 lb. of nonfat dry milk solids were sold for feed use. In the year ending March 31, feed sales of dry milk totaled 93,400,000 lb., which compares with 581,400,000 lb. sold the year before when an extensive program of sales was undertaken to reduce stocks and overcome a shortage of other proteins.

Dr. W. D. Morrison

APPOINTED—Toronto Elevators, Ltd., Toronto, manufacturer of Master Feeds, has announced the appointment of Dr. W. D. Morrison as nutritionist with the feed department. Upon graduation from the Ontario Agricultural College, Guelph, in 1949, Dr. Morrison was employed by the feed department as a territory manager. Following three years of sales work, he was chosen by the company to take post-graduate work in animal nutrition. In 1952 he entered the University of Illinois where he obtained his Ph.D. in animal nutrition last October. His duties include conducting nutrition research at the Master Feeds Farm and formulation of Master Feeds.

Dean and Alan Dungan, partners in Farmers Certified Mills Company, Lawler, Iowa wrote that their Bryant Double-Duty Hammermill gives:

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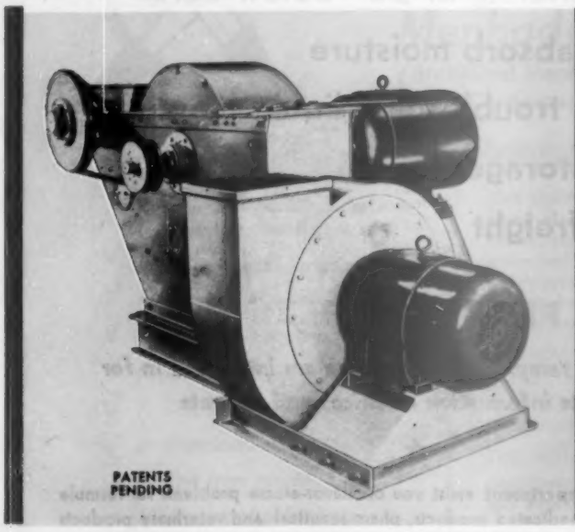

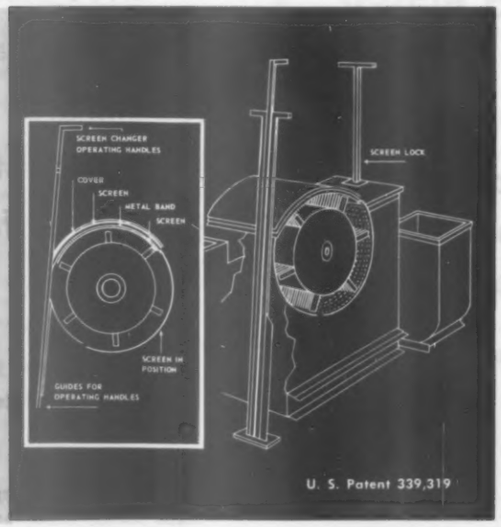

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Diagram above shows operation of the Bryant Simplex Screen Changer

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USDA Ignores Trade Protest on Sales

WASHINGTON—Topside decision of the U.S. Department of Agriculture, evidently made last week with the support of the Commodity Credit Corp. advisory committee, confirms its previously announced decision that it will sell grains on only an f.o.b. seaboard basis notwithstanding protests made by the private grain trade.

USDA sales officials are proceeding with requests for offers of river barge and lake freight to the government for their grain movement.

A special committee from the grain trade appeared here within the past 10 days to insist that this sales policy put the federal government more than ever astride the grain business. The USDA now is taking grain all the way from the farm through the loan program to port elevators, thereby bypassing every step in normal movement through private trade facilities.

This condition is considered by some observers as worse than earlier conditions under the Brannan administration. The USDA at that time set up an allocation procedure in which the private trade and CCC had to conform to port elevator requirements. Now the administration has gone one further step ahead—on the grounds of inventory management—and insists that it alone can handle its stocks from the loan takeover point through to the port elevators, grain men point out.

Soybean Crushings In First 2 Quarters Largest of Record

WASHINGTON—Crushings of soybeans in the October-March period this season totaled 149 million bushels, it has been reported by the Bureau of the Census. This is the largest of record, 23 million bushels more than for the first two quarters last season, and nearly 28 million above the same period two years ago.

The quarterly soybean market summary issued by the U.S. Department of Agriculture shows that exports of soybeans the first six months of the current season were at a record level at 45 million bushels, 5.6 million more than for the same months last season and nearly 14 million above two years ago. Japan, with 12.9 million bushels, was the largest single importer, with West Germany, 9.8 million, in second place.

Still, stocks of soybeans in all positions on April 1 totaled 176.5 million bushels, the largest of record. This compares with 176 million bushels on April 1, 1955, the previous record, and 118 million two years ago.

Farm stocks at 60 million bushels were nearly 50% below the 114 million on farms April 1 a year ago, but 23 million more than two years ago and the third largest of record. Interior mill and elevator stocks of 27 million bushels were 13.7 million less than a year ago, but 10 million more than two years ago. Terminal stocks totaled 22.2 million as against only 4 million on April 1, 1955.

Processing Plant Stocks

Stocks of soybeans at processing plants represented about 38% of the total stocks and amounted to 67.4 million bushels. This is nearly 50 million bushels more than on April 1 a year ago, 15 million more than two years ago, and the largest of record, according to the USDA report.

The margin between the market price of oil and meal obtained from a bushel of soybeans and the cost of the soybeans averaged 3¢ during April. This compares with 13¢ in March 1956 and in April 1955, and 11¢ for the five-year (1950-54) April average. The October-April average this season was 14¢ compared with 17¢ for the same period last season.

The margins are based on the assumption that a bushel of soybeans will yield 11 lb. of oil and 47 lb. of soybean meal and the following prices: Average price of crude oil at central western crushing plants, bulk price of 44% protein meal at Decatur, and market price of No. 1 yellow soybeans at Illinois country points.

These statistics are for comparison purposes only, USDA points out, and do not purport to reflect actual operating margins. The data used are simple averages of prices and do not reflect actual purchases and sales of soybeans, soybean oil or meal, nor do they reflect location differentials.

Prices Advance

Soybean prices in April averaged sharply above the March average which is a reverse of the pattern a year ago. Prices this season have advanced rather steadily since November with a sharp advance during April. No. 1 yellow soybeans at Illinois country points averaged $2.85 bu. during April compared with $2.56 in March and $2.54 in April 1955. The five-year (1950-54) April average is $3.10 bu. Farm prices of soybeans averaged $2.63 bu. compared with $2.42 in April 1955.

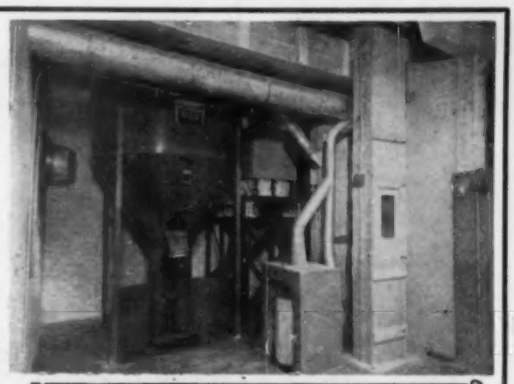
Farmers put 30.1 million bushels of 1955-crop soybeans under support as against 41.6 million from the 1954 crop. By March 15, 1956, USDA reports, farmers had redeemed 11.6 million bushels while at the same time last year they redeemed 3.3 million bushels. The national average support rate for the 1956 crop will be $2.15 bu. compared with $2.04 for the 1955 crop.

Record Acreage Indicated

The acreage of soybeans alone for all purposes this year will amount to 21.8 million acres if farmers carry out their March 1 planting intentions. This would be the largest of record and nearly 11% more than the previous record of 19.7 million acres planted last year.

If intentions are carried out for soybeans planted alone for all purposes and about the same proportion of the total acreage is harvested for beans as in the past two years, about 20.2 million acres would be harvested for this purpose. Applying the 1950-54 average yield, by states, to the computed acreage for beans results in an indicated production of about 410 million bushels, 10% more than the record crop of 371 million produced in 1955, according to USDA.

REMODELING and REPAIR



A large part of Ibberson's business is in rebuilding, modernizing, and installation of new equipment, such as bag conveyors, feed dressers and finishers, new mixers and sifters, air cleaning and dust pick-up systems.

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U.S.I. FEED NEWS

Vol. III, No. 5 ★ A SERIES FOR SCIENTISTS AND EXECUTIVES OF THE FEED MANUFACTURING INDUSTRY ★ May, 1956

New Concept in Ruminant Nutrition Finds Practical Use

A liquid feed supplement based on a new concept in ruminant nutrition is reported to produce more economical weight gains in beef cattle and increased milk production in dairy animals. The supplement contains a patented mixture of molasses, urea, phosphoric acid and an active hydrogen donor, along with all the essential minerals required by cattle.

The new feed supplement is the result of research on the nutritional requirements of rumen micro-organisms, with particular attention to hydrogen donor systems in microbial metabolism. The supplement speeds up rumen fermentation processes, enabling cattle and sheep to eat and assimilate more feed in a shorter time.

More Weight With Less Feed

Range calves continuously fed the new supplement averaged 300 pounds heavier at 18 months without grain feeding than calves raised in the conventional manner with protein supplements. At the same time, the animals given the liquid supplement consumed noticeably less grass. Proportionally better results were obtained when sheep were fed the liquid supplement. Also, dairy cattle showed significant increases in milk production.

Other Advantages

In addition to its meat and milk production benefits, the new liquid feed supplement is said to have these other advantages:

- It can be fed free-choice to cattle at all stages of their development and does not cause the toxic effects experienced with earlier molasses-urea mixtures.
- Carcass quality is usually upgraded with the new supplement.
- The supplement can be fed year-round in concrete, aluminum or black iron tanks.

The new supplement is the result of four years' research and field testing by the manufacturer, and is now being marketed nation-wide.

Feed Industry Sees Great Benefits From Increased Nutritional Research

In summing up the value of nutritional research to American agriculture, a speaker at a recent feed industry conference indicated that within a few years broiler growers will be able to produce a chicken in half the time with half the feed than was possible ten years ago. (See chart below)

This kind of progress in both poultry and egg production was attributed to the greater emphasis the feed industry is placing on nutritional studies.

Use of Methionine Noted

One of the significant trends cited at the conference was the increased attention being given to balancing the energy and protein levels in high calorie rations. The use of methionine to supplement natural protein sources was noted as an important factor in maintaining this balance. Methionine is one of the essential amino acids necessary for optimum growth response.

The trend toward higher levels of antibiotics in feeds is expected to continue. It was predicted that future levels of antibiotics would be several times higher than at present. Recent studies also point to the value of high-level vitamin feeding for promoting growth and preventing disease.

Use of Minerals Changing

Another promising area of investigation, according to nutritionists at the conference, is the use of fermentation products as a source of unidentified growth factors. Research also indicates that the use of phosphate supplements will undergo considerable change in the next few years. There is a trend toward the use of liquid phosphoric acid, especially in dairy feeds.

Average Feed and Time Required To Produce a 3 lb. Broiler

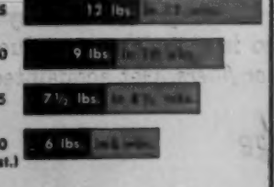

Chart shows how the efficiency of commercial poultry feeds has increased since 1945. Chiefly responsible have been such nutritional developments as the high energy ration and greater use of methionine, antibiotics and vitamins.

Methionine Ups Efficiency of High Wheat Ration

Canadian researchers working with chick and poult rations containing high percentages of wheat have found that adding methionine caused a consistent improvement in feed efficiency. These findings supplement earlier studies elsewhere which showed the value of methionine in rations based on corn.

The results obtained are of particular importance to those agricultural areas where wheat is the predominating cereal grain. These studies are believed to be the first to demonstrate the value of supplemental methionine in wheat-based diets.

Alert manufacturers check for adequate methionine level in their formulations. For dependable service and supply, contact your nearest U.S.I. Sales Office.

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Dry Buttermilk Output Up as Skim Falls Off

WASHINGTON — March production of dry skim milk for animal feed totaled 1,400,000 lb., a decline of 3% from a year earlier and down 18% from the five-year average for the month. However, dry buttermilk production at 6,200,000 lb. was the highest for the month since 1941, a gain of 16% from a year earlier and up 29% from the five-year March average.

These figures are contained in a report from the U.S. Department of Agriculture.

Cumulative production of dry skim milk for feed in the first three months of 1956 totaled 3,750,000 lb., a decline of 10% from the corresponding period a year earlier. During the first quarter of this year, dry buttermilk production amounted to 16,200,000 lb., 17% more than in the same period a year earlier.

The USDA report shows that stocks of dried skim milk for animal feed at the end of March totaled 1,003,000 lb., a gain of 47% from a year earlier, but a decline of 39% from the five-year average for that date. Stocks of dry buttermilk at 5,944,000 lb. gained 52% from a year earlier but declined 16% from the five year average.

Selling prices of dry skim milk for feed during March averaged 9.89¢ lb., down nearly ½¢ from the preceding month and off about ¾¢ from a year earlier. Combining both human food and animal feed, dry buttermilk prices averaged 13.12¢ lb. for March, practically unchanged from the preceding month, but about 1½¢ higher than a year earlier, according to the report.

In price support operations, USDA reports that it sold 785,000 lb. of nonfat dry milk solids for animal and poultry feed from April 1 through April 25. Sales during March totaled 1,304,000 lb. and for the marketing year just completed were 13,973,000 lb.

Red Meat Production In March Tops Month, Year Earlier by 4%

WASHINGTON—Production of red meat in March continued at a high level with pork production up 5% and beef output up 4% from the March levels of last year. Compared with February production, pork was up 3% and beef increased 4%.

The report from the U.S. Department of Agriculture on livestock slaughter and meat production shows that total red meat production by commercial slaughter plants in March totaled 2,265 million pounds, 4% above the total production in March, 1955.

For the first three months of 1956, red meat production totaled 6,926 million pounds, 10% more than the 6,244 million pounds produced during the corresponding period a year ago. USDA reports that beef production in the period was up 12%, pork output increased 12%, veal production was up 1%, and mutton and lamb production was up 5% from a year earlier. Lard production was up 17%.

Compared with the first three months of last year, the number of cattle slaughtered was up 6%, hogs up 17%, sheep and lambs up 5% while calf slaughter was off 1%.

Pork production totaled 955 million pounds during March. This was 3% more than in February and 5% more than in March of a year ago. The number of hogs killed during March totaled 7,532,100, 6% more than the kill in February and 11% more than the kill in March of last year.

Slaughter hogs at 228 lb. live weight were 2 lb. lighter than in February and 7 lb. lighter than a year ago, according to USDA. March lard output was 254 million pounds, up 9% from a month earlier and 15% more than a year earlier. The amount of lard rendered per 100 lb. of live weight of hogs slaughtered was 14.7 lb., compared with 14.1 lb. in February and 13.9 lb. last March.

March beef production totaled 1,131 million pounds, 4% higher than either the previous month or a year ago. There were 2,080,800 head of cattle slaughtered in March. This was 4% more than the slaughter in February but 1% less than the slaughter in March, 1955. Slaughter cattle averaged 973 lb. live weight which was 8 lb. lighter than February but 32 lb. heavier than March last year.

March calf slaughter estimated at 1,033,000 head was 9% higher than the estimate for February, but 8% below the March, 1955, slaughter. Veal production for March totaled 113 million pounds, 5% above the February output but 5% less than March last year. The average live weight of slaughter calves for the month was 197 lb. This compares with the February average of 206 lb. and the average for March, 1955, of 191 lb., USDA reports.

Sheep and lamb slaughter in March at 1,366,900 head was 4% above the slaughter in February but 2% below the slaughter in March, 1955. The amount of mutton and lamb produced was 66 million pounds, 3% more than February but 3% less than in March last year. The average live weight of sheep and lambs slaughtered in March was 101 lb., compared with 102 lb. a month earlier and 103 lb. a year earlier.

The USDA report shows that March poultry slaughter totaled 279 million pounds, ready-to-cook basis. Production was 9% above February, 17% above March last year and 59% above the 10-year average for the month.

Feed Dealers Attend Arcady Farms School

PEORIA, ILL.—More than 50 midwestern feed dealers attended a recent, day-long feed school held at Peoria by Arcady Farms Milling Co., Chicago. Arthur H. Palmer, Arcady nutrition and research director, conducted the school.

Highlight of the program was "The Healthy Grunt & How to Keep It," an address by Dr. J. O. Alberts, University of Illinois. Dr. Alberts' presentation dealt with swine diseases, their causes, diagnoses, and their prevention and cure.

Other subjects presented by Arcady personnel during the meeting included "More Profit from Hogs," "Pastures — Their Advantages and Shortcomings," and "Arcady Deals with Nutrition."

The Peoria meeting was one of five spring feed schools sponsored by Arcady. Others were held at Green Bay, Wis.; Bloomington, Ind.; Wauseon, Ohio; and Lansing, Mich.

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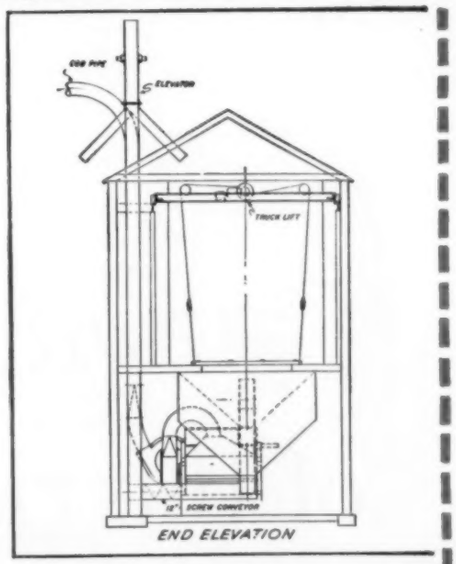

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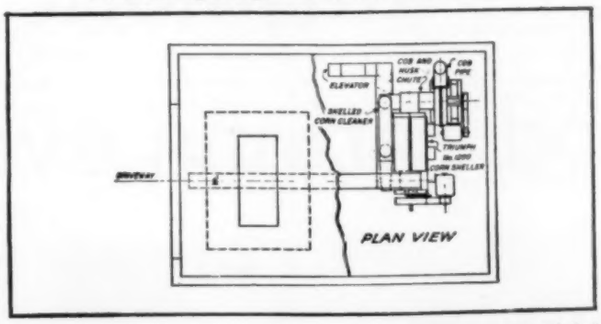
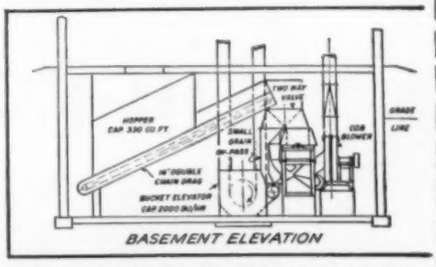


PLAN VIEW



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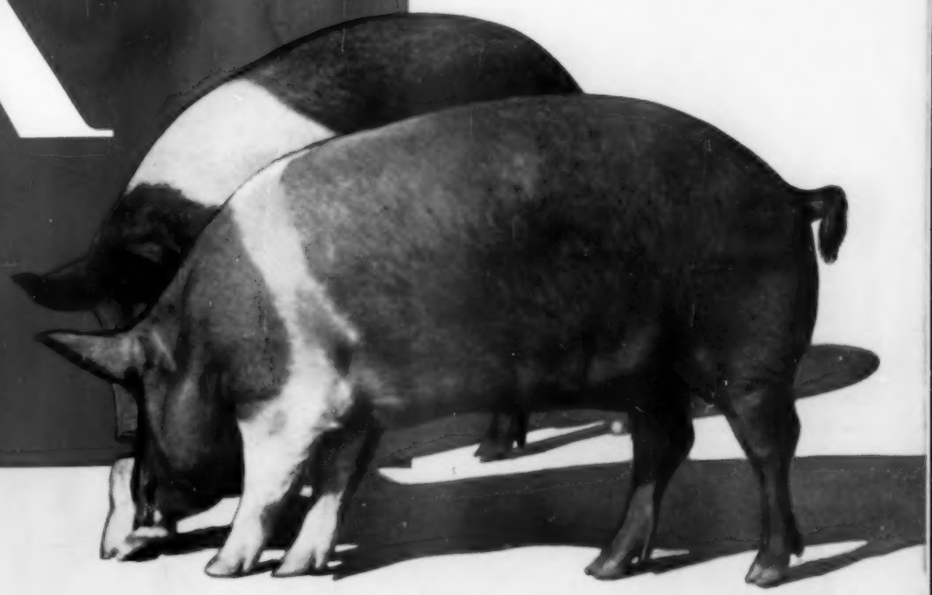

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This trend is in line with programs for "more efficiency in all phases of hog production" which are being advocated by leading experiment station specialists and farm livestock editors.

Feed manufacturers have been in the forefront of this movement. In advertising their own feeds and feeding programs, manufacturers have increasingly stressed the importance of the *right* amount of antibiotic so that pigs can get the most out of what they eat and put on gains at less cost per pound.

Many of these feed manufacturers have offered to their customers pre-starters, starters, grower feeds, supplements and concentrates containing the *right* amount of the *right* antibiotic–AUREOMYCIN Chlortetracycline. *And farmers say the extra cost per bag is more than justified.* In fact, they are *repaid many times* over as AUREOMYCIN gives life-long protection against clinical and sub-clinical diseases – and permits pigs, through good health, to attain TOP GROWTH quickly and reach market in the shortest possible time at the lowest possible production cost.

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Cellulose Digestion—As you know,

Disappearance of Oats and Stocks At Record Levels

WASHINGTON—The quantity of oats fed in the period July through March of this season was at a new record high. The total amount fed in the nine-month period was 1,141 million bushels, compared with 1,057 million bushels in the same period a year ago and 973 million for the same period two years earlier.

The U.S. Department of Agriculture's quarterly oats market summary shows that disappearance of oats for feed per grain-consuming animal unit this season was 6.7 bu., compared with 6.4 bu. last season and 5.9 bu. the five-year (1949-54) average.

Disappearance of oats for all uses in the first nine months of this season totaled 1,219 million bushels, the largest of record for the period, according to USDA. Exports of oats were the largest in 30 years.

Stocks of oats in all positions on April 1 totaled 674 million bushels, the largest of record. This is nearly one tenth more than the 619 million bushels a year ago and one fourth above the 10-year April 1 average.

Stocks on farms represented 87% of the total stocks and are estimated at a record of 588 million bushels. This is 7% more than the 552 million bushels on farms on April 1, 1955, and 20% above the 10-year average.

The Commodity Credit Corp. holdings in its bins amounted to 5 million bushels, more than double those of a year ago. Imports of oats, mainly from Canada, totaled 2.6 million bushels the first nine months of the season as against 16.5 million last season and 63.8 million the comparable months of 1953-54, the report shows.

Acreage seeded to oats last fall and this spring will total 46,063,000 acres, the fourth largest of record, if farmers carry out their March 1 planting intentions. This will be 4% less than the record oats acreage of 48,021,000 acres seeded in 1955 but 4% more than average. If the March 1 intentions are carried out and the yelds per seeded acre equal the five-year (1950-54) average, by states, production of oats in 1956 would be about 14% less than the record 1955 crop.

Sales of oats by the CCC, July through March, totaled 26 million bushels compared with 18 million for the comparable period last year. On April 1, the CCC owned 35.2 million bushels of oats in all positions, USDA reports.

Farmers put 68.3 million bushels of 1955-crop oats under price support this season as against 74.4 million from the 1954 crop. The 1956 oats crop will be supported at an average of 59¢ bu. as against 61¢ for the 1955 crop.

Oats prices on the farm the first nine months this season averaged 60¢ bu., 13¢ less than for the same period last season, and were the lowest since 1942-43.

MOVE ANNOUNCED

BLACKDUCK, MINN.—The the Blackduck Co-op Elevator and been operated as a branch of the business of the Blackduck Co-op Creamery next door to the creamery for many years, is being moved to the Balckduck Co-op Elevator and will become a part of the elevator business. Equipment for the mixing and grinding of feeds and concentrates is now being installed at the elevator.

U.S. Officials Treated To Delmarva Chicken

WASHINGTON — U.S. senators, President Eisenhower, Vice President Nixon and members of the press had Delmarvalous chicken for lunch May 3. Some 200 were treated to the lunch by Sen. John J. Williams (R., Del.).

Sen. Williams, a broiler grower himself from Millsboro, Del., served fried chicken to the senators in their private dining room in the capitol. Chicken also went to the press table and the White House.

This treat of fried chicken grown in the Delmarva area came as a promise he made to those attending the $100-a-plate dinner in Salisbury, Md., last month. He said the poultry industry has always stood on its own feet and solved its own problems without going to the government.

He said when he got back to Washington he was going to remind the senators of the accomplishments of this agricultural industry.

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FEEDING DRIED RUMEN ORGANISMS

By Dr. Charles W. Turner
University of Missouri

EDITOR'S NOTE: A phase of recent ruminant nutrition research is work on the feeding of dried rumen bacteria to cattle. Most experimental work thus far has been on a commercial basis, but among the first agricultural college workers to explore this subject was Dr. Charles W. Turner, professor of dairy husbandry at the University of Missouri. Dr. Turner, who has been a leading figure in rumen research over a number of years, is author of the accompanying article. He provides background information on the function of the rumen and rumen organisms, and then goes on to tell of the preparation of dried rumen bacteria and of the uses of the material in feeding calves and cattle. Dr. Turner says field reports and experiments on the use of dried rumen bacteria with cattle are "promising in indicating a benefit in the more rapid development of rumen function in calves, in improvement of growth and fattening of cattle, in increasing milk and fat production and in the more efficient utilization of roughage."

The development of the ruminant type of domestic animals such as sheep and cattle is one of the marvels of the animal world. In their evolution ages ago, these animals were provided with a digestive system far superior to that present in swine, poultry or in man. The remarkable part of the story is that it is only recently that the true significance of the ruminant digestive tract has been fully appreciated.

The ruminant animal differs from the simple stomached animals in having a large fermentation vat (the rumen-reticulum) in front of the stomach (the abomasum). This fermentation vat enables the cow, sheep and goat to digest roughages which would otherwise be unavailable to the animal and at the same time enables the animal to manufacture protein and many B-vitamins which would otherwise be required. The story of the role of the rumen organisms is one of the most amazing in recent nutritional science.

In the rumen there are three types of organisms:

1. The protozoa are one-celled animals. So far, no particular value in their presence has been discovered, although they do supply the animal with some animal protein.

2. Yeast-like organisms have been described. It is not yet known whether they are real yeast, i.e., that they produce alcohol, or are more like bacteria.

3. Bacteria are present in vast numbers. These organisms are of many types, sizes and functions (Figure 1). Their ability to grow and reproduce is of vital importance to the ruminant. Without a bountiful supply of the various types of bacteria present when food is taken in, there will be a limit to the capacity of the animal to act as a ruminant animal.

What, then, are the functions of the rumen bacteria?

Cellulose Digestion—As you know, one of the common ingredients of roughage is cellulose, which is made up of glucose molecules (sugar). However, while strong acid will break up cellulose into sugar, there are no digestive enzymes secreted by animals which will do the job. So in all single-stomached animals, cellulose, or crude fiber, cannot be utilized. In the ruminant animal, the rumen bacteria secrete enzymes which can digest cellulose.

If one examines pieces of plant tissue removed from the rumen, it will be seen that the tissue is covered with rumen bacteria which are eating out holes in the cellulose of which the stems and leaves are composed (Figure 2). The bacteria multiply greatly during the period they remain in the rumen. The cellulose which the bacteria eat away does not remain as sugar in the rumen but is consumed by the bacteria for their growth and multiplication. In place of sugar, the bacteria discharge as by-products of sugar utilization three chemical compounds which the ruminant makes good use of. These compounds are acetic, butyric and propionic acids. These acids are neutralized in the rumen by the alkali in the saliva and are then absorbed through the rumen wall and flow into the blood.

In the blood, the acetates are of great value to cattle since they can be used as a source of energy for growth instead of sugar and can be converted to fat to be stored in the body or secreted into milk fat. The propionates are also of great value since they flow to the liver and there are converted back into blood sugar. So while the bacteria use the sugar from the cellulose for their growth, they return products to the ruminant animal which can be used very effectively.

FIGURE 1—Types of rumen bacteria. Billions of these various bacteria grow and multiply each day in the rumen. Each type performs a useful service for the benefit of cattle.

Protein Production—In the multiplication of bacteria, they also require some source of nitrogen from which protein is produced. When protein is fed to the ruminant, the bacteria digest it and convert it into the protein of their bodies. However, since bacteria are like plants, they can also utilize nonprotein nitrogen. They can take urea, for example and convert it into the protein of their bodies.

The rumen bacteria which multiply are very rich in protein. The dried rumen bacteria contain about 57%

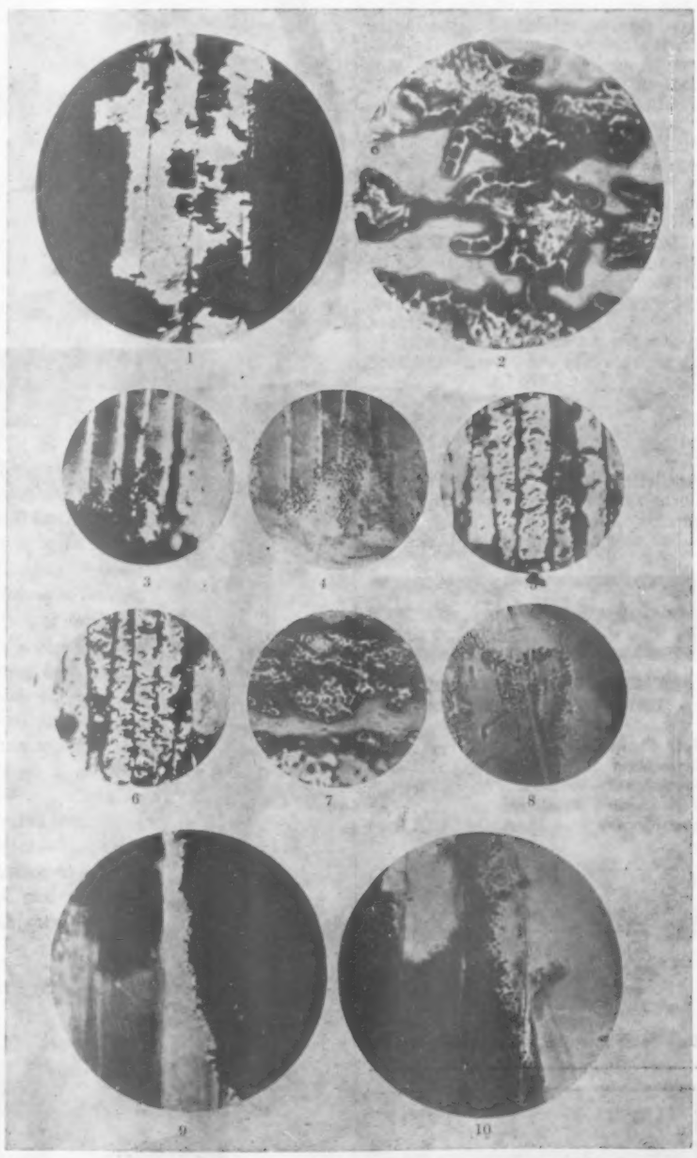

FIGURE 2—Digestion of the stems and leaves of plants containing cellulose by rumen bacteria. The bacteria exude enzymes which convert the cellulose to sugar which in turn is used by the bacteria as a source of food for their growth and multiplication.

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protein. This is as high as protein-rich concentrate feed.

The bacteria flow from the rumen with the feed into the abomasum, or true stomach. Here the digestive juices kill the rumen bacteria and begin the digestion of their bodies. The digestion is then continued in the small intestine where the amino acids are absorbed into the blood.

Vitamin Manufacture—The rumen bacteria, as you know, also are capable of making a number of B-complex vitamins, while non-ruminant animals like swine and chickens must be fed these vitamins.

Important Role

It can be seen that the rumen bacteria play a very important role in the well-being of ruminant animals. If they are not present in large numbers in the rumen, these important functions cannot be accomplished adequately and the animal will not grow, reproduce and lactate as it should. Under some conditions of feeding and management, some important types of rumen bacteria die out in the rumen. It has been shown that the types of bacterial present in the rumen change when on pasture, when fed predominantly on dry roughage and when fed concentrates. Thus, there may be many times when ruminant animals are deficient in bacteria of importance to them.

The lack of essential types of bacteria can be corrected by the incorporation in the ration of cattle of dried rumen bacteria which would constantly supply the various types of rumen bacteria most effective for the various jobs which they are required to perform. This practice would be the equivalent of adding new cultures of the rumen bacteria daily which would then multiply during the following 12 hours while the feed is in the rumen, utilizing the cellulose, making protein and manufacturing the B-vitamins.

Preparation of Dried Rumen Bacteria—While freshly harvested rumen bacteria (taken directly from the rumen by means of a fistula) would be ideal material to use and is satisfactory for experimental work, the practical use of the bacteria requires that they be dried. This is accomplished by obtaining the rumen contents of cattle at packing plants. The coarse material is separated, and the rumen bacteria are separated, washed and dried.

Since the rumen bacteria from large numbers of cattle are blended together, the chance that all the desirable types of bacteria are present is very high.

The animals which supply the rumen bacteria are government inspected healthy cattle. To insure the product further, tests are made of the dried rumen bacteria to make certain that no pathogenic bacteria are present.

Can Rumen Bacteria Be Dried Successfully?—The problem of drying rumen bacteria is of the utmost importance. Unless they are dried in such a way that they will be able to grow and multiply when reintroduced into the rumen, they would be of little value. If high temperatures are employed in the drying process, the bacteria may be killed.

It is important, therefore, to dry the rumen bacteria at low temperatures. It has been shown that they will survive freeze-drying (lyophilization) and dehydration at temperatures similar to that in the rumen.

Tests of Activity—The preparations of dried rumen bacteria can be examined and the number of organisms present can be counted. The number of billions of bacteria per gram can be reported. While this is important to know, the basic problem is: Are the bacteria present effective in doing the job required?

One of the most important activities as indicated above is the capacity of the bacteria to break down the crude-fiber or cellulose. Several tests of cellulolytic activity are now available.

The rumen bacteria can be tested in "artificial rumen." In this case the bacteria are dispersed in a nutrient media and a known amount of pure cellulose is added. After a number of hours, the amount of cellulose remaining is determined, and the difference represents the amount digested.

Simple Cellulolytic Test—The previous tests require the chemical determination of the cellulose which is time consuming. The North Carolina Experiment Station has developed a method for testing cellulolytic activity by a simple procedure. They use a water-soluble cellulose derivative called carboxymethyl cellulose of medium viscosity. When this preparation is dissolved in water it is quite viscous, and if run through a small tube, flows very slowly.

If rumen bacteria are added to such a solution and incubated for a number of hours at the temperature of the rumen, the enzymes produced by the bacteria act upon the cellulose and hydrolyze it, thus reducing its viscosity. At intervals, the viscosity of the solution is determined. When the viscosity has been reduced by 50%, meaning that half of the cellulose has been digested, the test is stopped and the time noted.

By the use of this test, the cellulolytic activity of dried rumen bacteria has been tested in my laboratory. Such a test as this can be used in checking upon the activity of batches of rumen bacteria for their capacity to hydrolyze cellulose and will be preferred to a simple count of the number of bacteria present.

Protein Synthesis Tests—The second use of rumen bacteria is the capacity to synthesize protein from urea. In the rumen, the urea fed is first converted to ammonia and then used by the bacteria in their multiplication to form bacterial protein. The dried rumen bacteria can be added to a solution containing urea and other nutrients and incubated for a period. The new protein contained in the rumen bacteria can then

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William A. Staempfli, Jr.

JOINS PENB—William A. Staempfli, Jr., 24, a poultry research worker and graduate of the poultry department at Cornell University, has joined the staff of the Poultry & Egg National Board as broiler promotion specialist. He will head a department of broiler promotion, the first of three commodity promotion departments planned by PENB. The others will be for eggs and turkeys. Mr. Staempfli worked with Prof. R. C. Baker of Cornell on various research projects dealing with poultry products, and is co-author of "Keeping Quality of Ready-to-Cook and Dressed Poultry," a report on two research projects in 1953-54. In June, 1953, he received his B.S. degree. Shortly afterward, as field research assistant in the department of agricultural economics at Cornell, he worked with Dr. A. William Jasper gathering material for a bulletin published by Cornell on "Increasing Sales of Fresh Fryers Through Improved Merchandising Practices." He also has had practical poultry farm experience.

be measured in comparison with a control preparation, i.e., without the added bacteria.

Tests such as these will insure the preparation of dried rumen bacteria which are viable so the users of these preparations will be assured of activity.

Uses of Dried Rumen Bacteria—With carefully prepared and standardized dried rumen bacteria available, it is now possible to further determine experimentally their value under many conditions and for many purposes. A few of these uses will be outlined. Undoubtedly, readers will think of many more types of feeding trials.

1. Calves. The desirability of the early function of the rumen of calves is becoming recognized. Calves will develop rumen function within two to three weeks, and by three months the calf has a rumen, which, in addition to its body weight, is as large as that of an adult cow.

It has been shown that calves can be fed dried rumen bacteria successfully starting at an early age. The bacteria would aid in starting rumen function earlier. The earlier use of roughage would tend to produce cheaper growth.

2. Growing and Fattening Cattle—The roughage fed to cattle in various parts of the country varies a great deal. Some varieties of rumen organisms tend to disappear under these varying conditions. The result may be decreased utilization of the crude-fiber contained and gradual reduction in rates of gain.

By feeding of dried rumen bacteria of all the various types, there will be present each day supplies of bacteria which will multiply in the rumen and more completely utilize the roughage ration fed.

3. Lactating Cows—Milking cows are subject to the same problems as indicated above when fed roughage of varying quality. Unless there are bacteria present to utilize to the maximum these roughages, there will be decreases in milk production due to a lack of carbohydrates and protein.

One of the most frequent types of ketosis arises from dysfunction of the rumen. When cows fail to obtain sufficient carbohydrate from the roughages due to a lack of cellulolytic activity of the rumen bacteria, the blood sugar level goes down and depot fat is mobilized to serve as a source of energy. This causes an increased production of ketone bodies. By the use of dried rumen bacteria, the crude-fiber will be digested in increased amounts, furnishing the carbohydrates needed and thus preventing ketosis.

4. Maximum Utilization of Roughage—When cattle are on high quality roughage, the rumen bacteria flourish and the most suitable types

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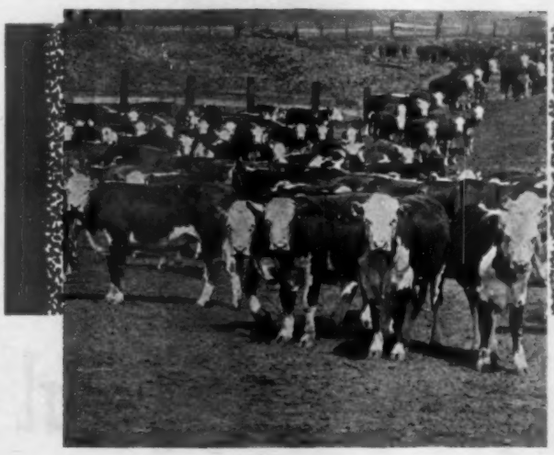

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of bacteria will usually be maintained. Under such conditions, the value of dried rumen bacteria may be minimal. However, the roughage available over the U.S. is not all of high quality, and the purpose of cattle is to utilize all of this roughage.

The writer is of the opinion that under conditions of poorer roughage feeding, the benefit in the feeding of dried rumen organisms will be most apparent. It is here that the benefit of obtaining greater digestibility of the crude fiber available will be most apparent. Not only will the organisms break down more cellulose; they will obtain more of the protein present in the plant tissue as well.

5. Use of Dried Rumen Bacteria with Diethylstilbestrol—The use of diethylstilbestrol in cattle feeding has become very popular during the last several years. It has stimulated greater gains in cattle wherever tried and with these gains an increased efficiency in the utilization of the feed.

Some research has shown that the presence of stilbestrol in the rumen stimulates the rumen bacteria to increased cellulolytic activity and thus provides the animal with a greater source of nutrients. If these observations are verified, it would seem logical that optimal results would follow the use of a mixture of dried rumen organisms and diethylstilbestrol in the feeding of cattle.

On the one hand, the greatest use of the roughage would be obtained, and, on the other hand, the hormone would enable the animal to make the most efficient use of the nutrients made available by the rumen bacteria.

Conclusions: With the discovery of the vital role played by the rumen bacteria in the digestion of crude fiber, synthesis of protein from nonprotein nitrogen, and manufacture of B-vitamins, it is only natural that nutritionisis would try to learn how to take full advantage of their activity for the benefit of the animal.

The author's object is to describe the recent development of preparing dried rumen bacteria which will make possible a greatly increased program of research and practical trials. Methods are described for the harvesting, washing and drying of the rumen bacteria from large numbers of healthy cattle at the central packing plants. These dried rumen bacteria are tested for pathogenic organisms and for cellulolytic activity. Because they are blended from large numbers of cattle they should represent all the important types of bacteria present in the rumen of cattle.

These dried rumen bacteria can be added to cattle feeds at low levels. In this way, at each feeding there will be introduced into the rumen cultures of the bacteria which will grow rapidly and supplement the activity of the bacteria present, thereby obtaining increased utilization of the crude fiber in the roughage, and increased synthesis of protein and of the B-vitamins.

Dried rumen bacteria are now being produced in commercial quantities. (This product is prepared by Poul-An Laboratories of Kansas City and is sold under the commercial name "Rufis." The rumen bacteria are combined in a base of sterile dried rumen ingesta, solubilized animal protein and cobalt sulphate mononydrate. The dried rumen bacteria and diethylstilbestrol combination is distributed under the name "Ruf-Stil.")

Field reports and experiments on the use of dried rumen bacteria with cattle are promising in indicating a benefit in the more rapid development of rumen function in calves, in the improvement of growth and fattening of cattle, in increasing milk and fat production and in the more efficient utilization of roughage.

The dried rumen bacteria in combination with stilbestrol should be studied more extensively since there is evidence that the hormone increases cellulose utilization through the mediation of the rumen bacteria as well as stimulating cattle to a more rapid rate of gain.

Finally, it was suggested that one of the chief benefits of the dried rumen bacteria would come from the increased utilization of the roughage of lower quality.

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You'll find G-AN-EN is quick and easy to blend. It's packed in 50-lb. bags. Order G-AN-EN from Kraft Foods Company, 500 Peshtigo Ct., Chicago 90, Illinois.

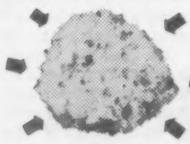
Cincinnati Feed Club Elects New Officers

CINCINNATI—Following the customary lively campaigning among members of the Cincinnati Feed Club, the "Mash" ticket defeated the "Pellet" candidates in an annual election and dinner-dance May 8 in the Cincinnati Club. The new officers are:

A. J. McGregor, Kentucky Chemical Industries, Inc., chairman, succeeding Robert L. Kemper, the Early & Daniel Co.; John F. Young, John F. Young Co., vice chairman; Dr. Lawrence E. Carpenter, Distillers Feed Research Council, Inc., secretary-treasurer, reelected, and James M. Deam, Buckeye Cotton Oil Co., and Charles M. Winchell, Darling & Co., directors.

Following dinner, a varied entertainment program was enjoyed by the 80 members, their wives and other guests present. The evening was concluded with dancing.

Make Your Poultry Feeds Do More Work



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CHARLES BOWMAN,
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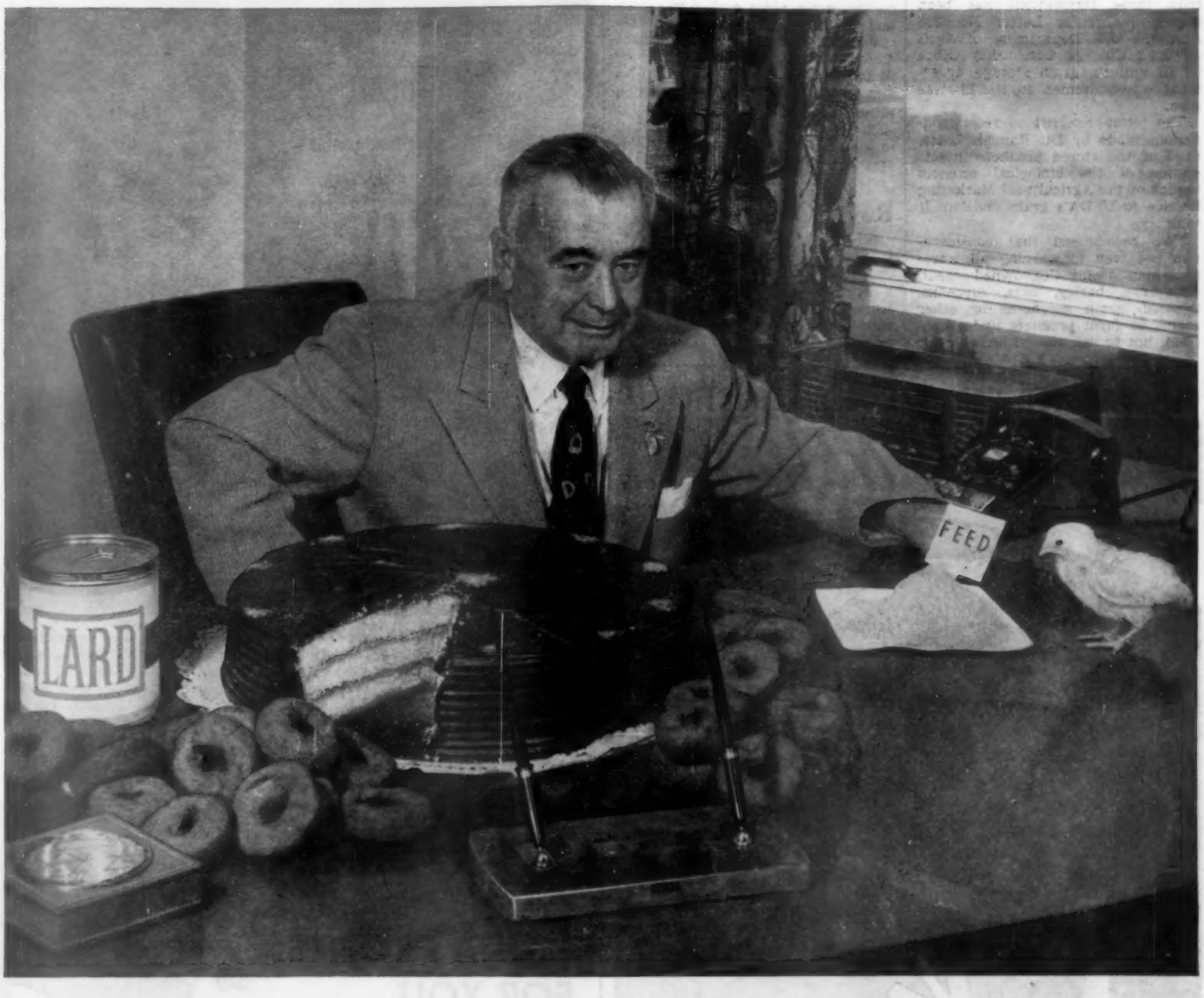

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MORE poultry feed manufacturers than ever before are getting effective protection against undetected oxidation, *without undesirable side effects,* using Vianol BHT.

The same chemical is also used to protect foods for human consumption. *You can use Vianol BHT with confidence.*

That's not all—Vianol antioxidant gives you these all-important advantages:

1. Protects essential Vitamins A, D, E—the all-important nutrients often lost in processing and storage.
2. Helps maintain pigmentation, flavor and aroma for long periods.
3. Protects against encephalomalacia (crazy chick disease).

Next time you order an antioxidant, look into the many benefits of using effective Vianol BHT. A Bowman Feed Products Representative will be glad to supply you with complete technical information without obligation.

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VIANOL A SHELL CHEMICAL PRODUCT

(2,6-di-tert-butyl-4-methylphenol) BHT

***Distributed by* BOWMAN FEED PRODUCTS, INC., 130 Central Ave., Holland, Mich.**

Limits Urged on Methyl Bromide Fumigations

CHICAGO—Limiting the number of methyl bromide fumigations of grain and related products to no more than three fumigations has been urged in Circular Letter No. 258 from the U.S. Department of Agriculture's Chicago Commodity Office to all uniform grain storage agreement warehousemen in its 19-state area.

The letter referred to recommendations made by Dr. Randall Latta, head of the stored products insects section of the biological sciences branch of the Agricultural Marketing Service to USDA's grain division. It said:

"We recommend that consideration be given to warning all warehousemen storing CCC-owned wheat, corn, rye, barley, oats, soybeans, flaxseed, grain sorghums or other grains or farm products under contract, not to use methyl bromide for more than three fumigations, or if the fumigation history is not known, not to use it at all."

The circular letter pointed out that danger lies in use of methyl bromide as a fumigant in that "a certain amount of bromide residue remains on the grain after each fumigation, and it is assumed that when this residue accumulates in sufficient amounts it may make the grain unfit for food or feed uses."

The Food & Drug Administration established the limits of tolerance for such residue at 50 parts per million in a statement published in the Federal Register for Dec. 21, 1955.

Roy T. Young Dies

WICHITA, KANSAS — Roy T. Young, 67, died recently at the St. Francis Hospital in Wichita. He was a retired manager of the Valley Feed & Seed Co. He is survived by his widow, three sons and three daughters.

NEW GRAIN ELEVATOR—One of the South's newest grain elevators began operation recently on President's Island at Memphis, Tenn. It is the Norris Co.'s new 350,000-bu. elevator which will be used for the storage of yellow corn, white corn, soybeans, wheat and oats. A conveyor 700 ft. long carries the grain from barges in the Mississippi River to the huge elevator. The capacity of the conveyor is 8,000 bu. per hour. Directing operations at the new Norris elevator is E. W. Abbott. The company's home office is Chicago.

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Every day, more and more poultrymen are learning that hens need EXTRA CALCIUM (Over and above that contained in usual mash or mash-grain diets) to achieve MAXIMUM EGG PRODUCTION. That's why the sales of Eggshell Brand Oyster Shell are growing by leaps and bounds! ARE YOU GETTING YOUR SHARE OF THIS EXTRA VOLUME?

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faster growth
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bag!

All of the important proteins, minerals and B vitamins needed for maximum growth rate are provided by Distillers Dried Solubles—PLUS unidentified factors which have been demonstrated in feeding tests at agriculture experiment stations. Give your customers a well-balanced poultry ration at a fraction of the cost of expensive supplementary ingredients . . . fortify their feed with Distillers Dried Solubles. For additional information write to *Distillers Feed Research Council, 1232 Enquirer Building, Cincinnati, Ohio*

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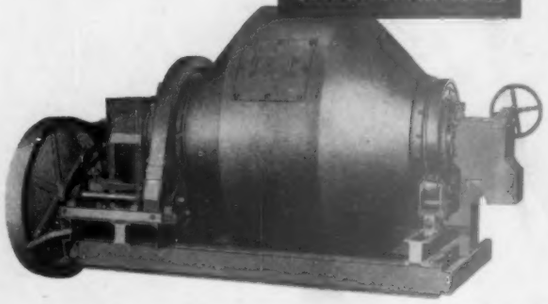

MOBILE OPERATIONS—Many feed men who have purchased mobile grinding-mixing equipment have come to adopt varying techniques of operation, depending on the needs in their own market. Here is a two-man crew operating a unit for Young's Feed Mill, Hattiesburg, Miss., on a customer's farm. Mobile feed mill equipment ownership has increased in recent years, especially in the grain producing areas of the nation.

Mobile Grinding-Mixing Practices Vary

By Martin Francis

The increasing use of mobile feed grinding and mixing equipment—especially in the grain producing regions of the nation—has brought with it varying opinions as to what are the best operational techniques. Feed dealers differ in operational practices, perhaps because of differences in geographical areas, community requirements and management viewpoint.

Some operators find that two workers are necessary to accompany the equipment and operate it. Others disagree, stating that one man is sufficient since the feeder is always requested to be home and available to help when the unit arrives on the farm.

One eastern operator states that he employs one man three days a week on the unit, with a helper, and another man, 2½ days, also with a helper.

"To let one man run such a unit on a heavy 10-15 hour a day schedule six days a week is too much," says the feed dealer, "so I give each man a half week. I find he does better work on such a schedule, is a better salesman and continues to have the best attitude toward his work. One man is boss of the outfit; the helper merely assists. The boss of the outfit, sells, supervises and collects. It's a tough job and he needs relief."

Two Men Per Unit

Several other eastern area mobile unit operators say they use two men on a unit. Marvin Jansma, owner of Marv's Milling Service, Fulda, Minn., takes the opposite view.

"In our operation we have one man handling the complete job. He loads the feed he needs for the half day's work right on the grinder and has it handy for both parties. We expect and almost insist that the customer be home and help with the job. We can do it better, faster and collect for the job all at one time. Since this method eliminates the need of another truck to deliver and a man to operate it, we charge less than most operators do and net more.

"The operator of a unit should be a man who is both a feed salesman and a mill operator, as he is the one who is in direct contact with the customer and can suggest and advise feeds and formulations for other types of livestock which may not be taken care of at the present time. If a commission basis is used, the operator will be interested in securing more feed business and it is the feed business and not the grinding operation which makes up the net profit at the end of the week or season.

"Considering the service being given I think that the customer is getting

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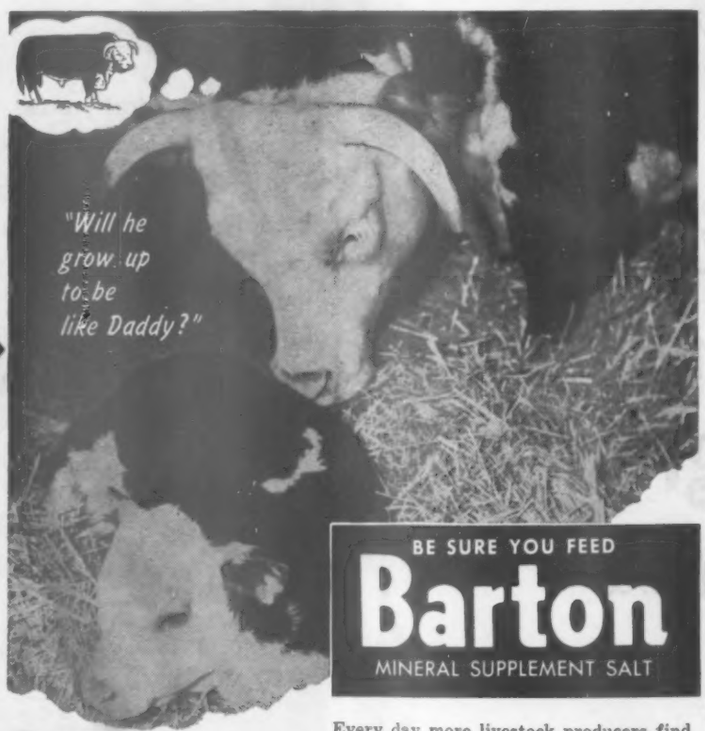

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more than repaid for his helping during the grinding and mixing operations. If he were to get the same job done at the stationary mill he would have to load the feed, haul it to the mill, haul it home and unload it in his feed bin.

"With our unit all the farmer does is scoop the grain from the bin into the grinder. He does not have to lift it high in the air to get it into a box or out of it. If his grain is in two different locations we move from one to the other and take the amount needed of each, and then after the correct amount has been run through the machine into the mixer we drive the unit to the bin or feeder and unload it there.

"Many farmers in this region have hogs out to pasture and self-feeders there and so we haul the feed there to the feeders and unload it. It takes less than one hour to grind, mix and unload a batch of 100 bu. of feed. Compare that with the amount of time needed to load, haul and unload if he takes it to a stationary mill.

"Also, and the important thing is that he is right there to see that the job is done as he wants it, and he is also there to make payment. Many of our jobs run from $50 to $100 per job. It doesn't take many of them in outstanding accounts to make it difficult for the operator to maintain his stock of feeds. We have less than 2% of our yearly gross volume on charge accounts at any one time. That permits us to do the job cheaper because we can eliminate borrowing capital at interest."

An analysis of labor costs appears to be a matter for each dealer to work out on his own. Some farmers, however, want the mobile unit crew to do the complete job. If the farmer is in a busy season with his crops, he doesn't want to take time off to help the mobile unit. "A package deal is what the farmers in this area want," one dealer says.

"If I operated the mobile unit all by myself without a helper," states one feed man, "then I wouldn't have time to do any extra selling. This way the helper can do lots of the little jobs under my direction while I sell more services. Sure, it costs us more that way, but our sales are greater, too."

In one area, a feed dealer who has two mobile units pays his employees a salary and commission, and then he and another employee contact new customers and sell them. The employees on the mobile unit are delegated to sell the regular customers, but benefit in commissions when the dealer lines up new customers for mobile service. Another dealer pays his men commissions only, and says they scratch for business under that plan and like it. But here, too, the dealer helps the mobile crew in contacting new customers.

Mr. Jansma also points out that costs of mobile units vary, depending upon their size and weight, and also whether they are new or used. Some dealers, he reports, may buy good used units to start a mobile operation in their areas. The lighter units, he states, can often operate on farm roads in wet weather, whereas heavier units are barred by law from some roads in wet weather.

In the matter of schedules, Mr. Jansma does not agree that a dealer with a mobile unit should adhere to a strict schedule. However, other dealers say that a schedule of calls on every day of the week, in specified areas regulates their business and also lowers operation costs. There are many dealers who agree with Mr. Jansma's point, too.

In this regard, he states, "I cannot agree that the operator would be giving the best service if he sets up a route system. During the spring there is the difficulty of wet corn

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More and more large feeders and growers are turning to bulk feed to cut costs. Selling and servicing these big, important accounts at a profit calls for a bulk feed program that includes both low handling costs and low storage costs.

Butler bulk feed tanks help you get both. Capacities from 3 tons up give you the right sized "package" for every storage need. Hopper bottoms (and built-in mechanical handling equipment, when desired) let you handle feed with minimum labor and time. All-steel construction assures maximum protection from weather, moisture and rodents.

The two Butler Bulk-O-Matic feed tanks shown above are typical of the way feed dealers and manufacturers are using Butler tanks as sales tools to get big volume business — and cut costs at the same time. This installation is owned by feed dealer H. J. Schult & Son, Sumner, Iowa. Besides clinching sales by enabling this dealer to sell in bulk, the tanks permit larger, less frequent deliveries and better planning.

Get the details of how Butler bulk feed tanks can be used as an important part of a sales-building bulk feed program. Write the office nearest you.

Butler makes a complete line of bulk feed tanks. Galvanized steel tanks are available from 3 to 6 tons, welded steel tanks from 8 to 44 tons and bolted steel tanks to 60,000 bushels for feed storage at mills and distribution points.

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which makes it impossible to grind and mix any large amount. Also the route system does not take into account any emergencies which may come up for the customer. You just can't tell a farmer that he will have to do that job on a certain day of a certain week and expect to keep him as a customer. The theory behind it is good and would be wonderful for the operator and make money for him if it could be followed.

"Your grinding-mixing service has to be a service to the customer, and you pretty much have to take care of him when he wants and needs the service. Here again I maintain that you are giving him more service if you have the feed he needs with the unit when you stop at his farm. We can carry quite a bit of feed right on our unit. If you have to have the feed for such jobs delivered any other way, the operator or the farmer will have to move it to the point that it will be used and that takes time."

Concerning the element of costs, one mobile unit operator says, "There is so much competition in this state that all we can get for a batch mix of feed is $5. I hear that in other states they get $8 a mix. So you can see we have to work long and hard to get costs out of each job on the grinding and mixing. We sell intensively to give us a better break on the total deal."

Most certainly this brings out the fact that prices for grinding and mixing vary in different localities. The condition of roads also varies. The distances between farms are another factor. The amount of feed ground and mixed on each job is also a cost determinant. The sales initiative put forth by the operators of various units, too, differs in terms of extra sales achieved, and this undoubtedly depends somewhat on the way an operator is paid for his services. The man who sees a chance to make extra pay through plus selling certainly is not going to spare himself when the sales opportunities arrive.

Mobile unit operators all vary in the time which they set aside for the maintenance of the mobile units. One dealer with two units uses Saturday as an emergency job day for one unit, with the second undergoing maintenance. The following Saturday, the second truck gets a thorough re-checking, with the other unit handling the emergency work.

ELEVATOR FIRE

TELL CITY, IND.—Damage was estimated at between $60,000 and $75,000 after a spectacular fire destroyed more than half of the Tell City Feed & Grain Elevator, Inc. The fire was said to have started from defective wiring or combustion in a grain bin. A five-story elevator and 14 grain bins that held about 15,000 bu. of corn were destroyed as well as several large pieces of equipment and other grain supplies. The mill was undergoing extensive repair work.

H. E. Frederick

Shea Chemical Forms Agricultural Sales Unit

JEFFERSONVILLE, IND. — Consolidation of all agricultural sales was announced May 2 by the Shea Chemical Corp. The new division will be headed by H. E. Frederick, vice president. Errol F. Cook becomes nutritionist, and William J. Barrett, technical sales engineer.

Chief duties of the group will be to direct the Shea firm's sales to the feed and fertilizer industries. Products sold to animal and poultry feed manufacturers include dicalcium phosphate and phosphate feed solution.

Shea's capacity for the production of agricultural products is being increased this year with the addition of a new phosphorus furnace, now being constructed in Columbia, Tenn.

Mr. Frederick, who heads the new sales division, has been engaged in agricultural activities most of his life. He joined the Shea firm in 1952, as director of sales, subsequently being made a vice president. Following his graduation from Ohio State University in 1920, he was affiliated with the U.S. Rubber Co., and later, the Ralston Purina Co. In 1930, he joined O. M. Scott & Sons Co., and became secretary-treasurer and general manager of Scott Mills, Inc., when it was later organized.

Mr. Frederick has also been active in industry association work. Positions he has held include executive board member of the American Feed Manufacturers Assn., director of the Grain & Feed Dealers National Assn. and president of the Ohio Grain Mill & Feed Dealers Assn.

UNDERGOES SURGERY

KANSAS CITY — Fred Bienhoff, manager of the feed department of Bartlett & Co., Kansas City, is in St. Joseph's hospital, Kansas City, where he underwent an operation this week.

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PACAL hard-faced HAMMER CLUSTERS*

Control your grind with custom cutting Pacal Clusters. Pacal's efficient, hard-faced tips are sharpened with every revolution. Each hammer cuts grain cleanly with the force of the entire cluster.

Because of high efficiency, Pacal Hammers last up to 10 times longer and reduce screen breakage by 50%. Clusters are easy to handle, quick to change.

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Pelleting Raises Value Of Hay for Steer Calves in Illinois Test

ROBBS, ILL.—Pelleted hay fed to steer calves was worth $15.68 a ton more than the same hay fed long or chopped in experiments last winter at the Dixon Springs Experiment Station of the University of Illinois, according to a report from the station.

George Cmarik, cattle specialist, said that steer calves fed pelleted hay gained 206 lb. over a 119-day feeding trial. Average daily gain for these calves was 1.7 lb.

At the same time, similar calves fed long hay gained 75 lb. a head, on the average, and those fed chopped hay gained 74 lb. for an average daily gain of about .6 lb.

Calves fed the same forage put up as silage gained only 5½ lb. during the test. After 28 days on silage alone, these steers lost 48 lb. a head because they couldn't eat enough of the high-moisture silage. Station researchers added 5 lb. of chopped hay daily per head to get any gain at all, but the gains still were not satisfactory.

Mr. Cmarik points out that pelleted hay is a highly concentrated feed, and the steer calves apparently liked to eat it. They ate an average of 15.7 lb. of the pellets a day. That's about 3.5 lb. more feed than normally expected of steers of their age and weight. Every 15.7 lb. of pelleted hay contained 14.3 lb. of dry matter.

Steers on pelleted hay needed only 826 lb. of dry matter to put on 100 lb. of gain. The pellets produced 175% more gain on 50% more total feed eaten.

Steers on long and chopped hay ate 9.5 and 9.3 lb. of dry matter a day in 11 lb. of total feed. Dry-matter intake was about 1.5 lb. below recommended daily amounts. Steers on silage and hay ate 6.1 lb. of dry matter in 17.6 lb. of daily feed and barely maintained their weight.

The important part of this trial, Mr. Cmarik says, is the difference in cost of gains of the calves wintered on loose hay and on pellets. With hay figured at $20 a ton and no charge for pelleting, steer gains on loose hay in this experiment cost 17.2¢ a pound compared with 9.1¢ a pound for gains on the pellets.

Mr. Cmarik said the pelleting cost will vary with the situation and may in some cases be high enough to offset any pelleting advantage.

Pelleted feeds usually cost $2 to $3 more a ton than the same feed sold as meal. Mr. Cmarik said results of this experiment indicate that a ton of pellets is worth 104.5 more pounds of gain than one ton of the same hay either long or chopped. At a conservative price of $15 cwt. for steer calves, he said, this additional 104.5 lb. increases the value of pelleted ground hay from $20 a ton to $35.68.

Included in this test were 60 steer calves from the grade Hereford herd on the station, divided into four equal lots by weaning weights. A mixture of timothy and alfalfa was fed, the greater proportion being timothy. The silage was cut at the same time as the hay.

FEED STORE MOVED

BELEN, N.M. — The Mid-Valley Feed Store, owned by Mr. and Mrs. C. L. Nichols, has been moved to a larger building here as a result of the growing livestock, dairy, and crop farming business of this area.

Vitamin Antibiotic PRE-MIX

"PLUS" for swine, poultry, cattle. Also custom pre-mixes.

Carroll Swanson Sales Co.

620 Des Moines Bldg., Des Moines, Iowa

Distributors and Sales Agents Wanted Protected Territories.

Lederle Laboratories To Sponsor College Research on CRD

PEARL RIVER, N.Y. — Research grants totalling $30,000 have been made to six universities by the Lederle Laboratories Division, American Cyanamid Co., to study one of the major disease problems affecting the nation's $4½ billion poultry industry. Known as "chronic respiratory disease," the disease is largely caused by organisms which resemble those responsible for pleuro-pneumonia.

Universities receiving the grants are the University of California, University of Connecticut, University of Delaware, University of Illinois, University of Maine and the University of New Hampshire. The studies seek to determine all the causative factors in chronic respiratory disease (CRD), methods of detection and ways to eradicate it.

Though the organism was isolated in 1935, the disease has been gradually spreading until it is now the most serious source of economic loss to the poultry industry. Acutely infected birds will go off feed, become thin, and within a few days the value of a broiler flock can be halved. Similarly, the egg production of layers can be greatly reduced when acute CRD is present.

It is almost impossible to determine the presence of the disease without laboratory examination because symptoms vary widely, and it can often be mistaken for or combined with other respiratory diseases. In many cases the pleuro-pneumonia-like organism (PPLO) has been present in chickens that show no symptoms of the disease at all. The organism, however, can be transmitted to the hatching eggs. Studies have shown that 10 to 46 percent of the embryos and chicks hatched from infected flocks presented CRD lesions.

It is also transmitted through contact with infected birds and in feed, water and litter that have been contaminated with the bacteria. Fortunately, human beings are not susceptible.

It is now believed that the CRD organism is the causative factor in air sac infections which account for a high percentage of condemnations of broilers at the processing level.

Studies have shown that the presence of CRD infection in a flock may go unobserved until some stress factor is introduced. When stress occurs, CRD frequently develops into an air sac infection.

A blood test developed at the University of California department of poultry pathology is effective in showing the presence of antibodies which form as the result of active CRD. It is not yet known how effective this test will be in identifying the disease in "carriers" or birds in which the disease is latent rather than active.

As yet there is no known cure for the disease, but it has been shown that antibiotics can reduce or eliminate the symptoms and increase food consumption to normal levels. Streptomycin injections, or the addition of chlortetracycline (aureomycin) or oxytetracycline (terramycin) to feed or water has been recommended.

Change at Chase

CHICAGO — On June 1 the duties and responsibilities of the advertising department of the Chase Bag Co. will be under the direction of A. W. Clark. E. E. Foster, manager, advertising and sales promotion, is leaving the company to take over a business opportunity in Florida, the company announced this week.

FEED STORE SOLD

FLENSBURG, MINN.—The Gessell Feed Store has been sold by Joe Gessell to Louis Kulus. The store will continue to grind and mix feed and serve as a cash buyer of eggs and poultry. Mr. Gessell lives at Swanville, Minn., where he has another similar business which he will continue to operate.

POTOMAC Pure Crushed Oyster Shell For Poultry

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the purified ANTIBIOTIC complex—
that does your feed antibiotic job better!

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KEMITRACIN is employed at the same gram level as any other quality antibiotic, but remains longer in the intestinal tract. This extra "staying power," we believe, makes possible the maximum antibiotic effectiveness in obtaining optimum growth and therapeutic benefits. KEMITRACIN mixes thoroughly and uniformly — is priced right. Send for complete scientific data. There's no obligation, of course.

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WORTH More because it DOES More

POLYSTAT in your feeds *does more* for *you!* It is palatable, mixes well . . . is safe and effective. Simplifies your medicated feed program . . . multiple benefits reduce the flock service required. Makes feeds easier to sell because it's widely advertised and . . .

POLYSTAT has been proven by practical profit-wise poultry men on millions of broilers and turkeys. Plan to get more profit from your poultry feeds with POLYSTAT. Send for special feed manufacturers prospectus.

POLYSTAT *does more* for your broiler and turkey raiser customers, too . . . helps them:

- **PREVENT COCCIDIOSIS**
- **PREVENT WORMS** (tapeworms and large roundworms)
- **PREVENT HEXAMITIASIS** (in turkeys)
- **PREVENT BLUECOMB** (in turkeys)
- **PREVENT PULLORUM** (in chickens and turkeys)
- **PREVENT TYPHOID** (in chickens and turkeys)
- **STIMULATE GROWTH** (even with antibiotics in the feed)
- **IMPROVE FEED EFFICIENCY** (Average, 9.6% faster growth on ¼ lb. less feed per lb. live weight)
- **GET BETTER COLORING** (yellower skin, redder combs, better feathering)

DR. SALSBURY'S **3-Nitro**

IMPROVES STARTING, GROWING, LAYING MASHES

Chicks develop quicker, pullets lay up to 15 days sooner . . . on feeds containing 3-Nitro. Hens have better development, added vitality to lay as many as 12 extra eggs per bird. Widely advertised, proved conclusively on field tests. Write for feed manufacturers bulletin on 3-Nitro. *Ask for data on 3-Nitro for pig feeds too.*

DR. SALSBURY'S LABORATORIES, Dr. SALSBURY'S Charles City, Iowa

LIABILITY IN SALES OF FEEDS

(Continued from page 52)

liability for a casualty to animals or poultry may fall on the manufacturer, middleman or retailer. The answer to the question of who is liable varies according to several factors—if the action is brought on the ground of breach of warranty, the seller alone is liable to the one who purchased the product. Thus, if the owner of poultry suffers a loss through a feed made unfit by whatever cause, he may bring action for breach of warranty against the one from whom he bought the product. And if the one from whom he bought was a small proprietor, handling packaged products which he had no hand in putting up, he is the one liable, and not the manufacturer, for breach of warranty. This is a general rule, and does have one or two modifications—as for example, if the customer buys under a patent or other trade name, there is no implied warranty as to fitness on the part of the seller. (Sec. 15, par. (4) of Uniform Sales Act.) And the manufacturer may be tied in to liability for breach of warranty, under certain circumstances, without actually being the seller. It depends upon the undertaking a manufacturer makes, at times to any and all consumers; furthermore, an agent of a manufacturer may tie him into liability for breach of warranty.

Where the consumer has not purchased from a manufacturer, or from his agent, there is, generally, no liability on the manufacturer, for breach of warranty, on the fundamental doctrine that where there has been no contractual relationship between buyer and manufacturer there can be no warranty by the manufacturer. This is described, at times, as the rule of privity of contract.

Until recent times there was no right of action against the manufacturer, even in tort, where privity of contract was lacking. Many of the states have now, however, modified or abandoned the rule that there must exist privity to maintain an action in tort for negligence. The ice was broken on this matter, in this respect, by a celebrated case in New York state, some years ago (MacPherson vs. Buick Motor Co., 217 N. Y. 382). Judge Cardozo, then on the Court of Appeals in New York, writing the opinion, stated that a manufacturer of an automobile was liable to a remote vendee for injury caused by failure to properly inspect a wheel which had been bought by the manufacturer from another maker, which had in it a hidden but discoverable defect. Before that time the action would not have succeeded because of the privity of contract rule.

Other States Follow

It did not take long after that for other states to fall in line with the new principle of law announced in the MacPherson case. Massachusetts came forth with its new light, similarly, in the case of Carter vs. Yardley & Co., Ltd., 319 Mass. 92. In this case a woman brought an action in tort against a manufacturer for negligence (having purchased perfume from a retail store and not from the manufacturer) the perfume having caused burns when applied to her skin. There was evidence that perfume from the same bottle injured the skin of three other persons when applied. The Supreme Court held that a finding that the manufacturer had failed to exercise proper care in the processes of manufacturing and bottling the perfume was warranted by the evidence; that such processes were fully in the manufacturer's control, there having been no opportunity for the retailer to have examined the contents of the bottle.

It was the first time, in Massachusetts, that the rule that there must be privity of contract to maintain an action in tort against the manufacturer with whom there was no contractual relationship, was dis-

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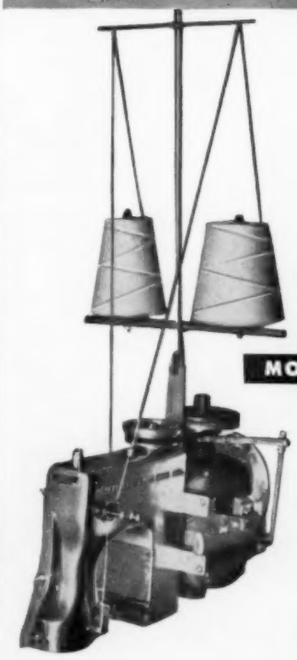

With just a turn of the switch, the conveyor platform of the new Model RC-100 Minneapolis Sewing Machine automatically adjusts to sew any size bag from five pound sample bags to 200 pound bulk storage bags. It's simple to regulate the Model RC-100 to provide the most efficient sewing level for any height operator, too. The operator sews any size bag without standing in an awkward, tiring position.

The standard 7′ model has a 6′ conveyor from center to center of pulleys. Machine is five feet high and three feet wide. Outstanding features include: Improved foot pedal sewing control, built-in belt tightner, heavy-duty gear head motor and chain reduction.

At current labor costs, you can't afford to waste time with inefficient, antiquated machines. Install Minneapolis machines and increase your profits.

MODEL M-100 HEAVY DUTY SEWING HEAD

This versatile, cast aluminum head sews paper, cotton and burlap bags without time consuming adjustments. M-100 uses two thread chain stitch . . . is easy to thread. Made with only standard S.A.E. nuts, bolts and set screws. Weighs only 63 pounds including motor. Model M-100 is standard head with Model RC-100.

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IF YOU'RE IN THE DOG HOUSE WITH YOUR FEED CUSTOMERS...

It's Time To Change To Staley's FEEDS

It's not his fault he's in the doghouse. Poor-performing feeds are to blame. It's hard to understand, too. When he first took on his present line of feeds a few years back, his customers were quite pleased with the results, and he built up a good business.

But somewhere along the way—something happened. No longer were his customers getting good results. What seemed like simple complaints at first, turned into lost sales, as one by one his best customers drifted away.

The reason? The feeds he sold failed to keep up with the latest nutritional advancements. Advancements like Staley's new STA-FAT Chick Starter that produces 16% more gain on 14% less feed in 2 weeks less time; or Staley's Baby Pig Formula that's 4½ times more nutritious than sow's milk.

So if you've been receiving more complaints than usual because your customers are not getting the results they expect, do this: CHANGE TO STALEY'S *FAST* . . . *before* you too, wind up in a financial doghouse. For all the money-making details about our new plans for '56:

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it. Failure to establish this by def-

germs and malignant edema can get

regarded. The rule still exists, nevertheless, in actions for breach of warranty. But, a manufacturer and bottler of perfume, expecting each bottle to go, unchanged, through the channels of trade into the hands of some ultimate consumer, owes the purchaser of the bottle the duty of reasonable care to prevent injury to such purchaser in the use of the product, even though there is no contractual relationship between such purchaser and the manufacturer. The jury, in any case, is the arbiter of facts, and negligence is a question of fact.

The Carter case seems to point, typically, to something somewhat evident; namely, that lawyers who would bring suits of this sort would undoubtedly prefer to bring them before juries. This seems to be borne out in the cases examined in different parts of the country on these points. The juries generally find negligence even though the casual connection between the manufacturer's part and the injury is often circumstantial.

FURTHER ON LIABILITY OF MANUFACTURER—The case law throughout the country which has developed in the last couple of decades shows, collaterally, that there is an added exposure to negligence suits against manufacturer because of the introduction of chemicals and medicaments in feeds and remedies. Apparently, these substances are prone, under certain circumstances, to cause illness and death to animals and poultry, not because they are harmful inherently but because they are not mixed in the most correct proportions, or because bags become mislabelled, or because of contributing factors such as bags becoming wet and causing spoilage, and other things. These substances, referred to, are subject to changing their characters from blessings into woes when some untoward circumstances act as catalytic agents in stirring up bad broths.

Cases against manufacturers and dealers on the ground of negligence are not new. But the older cases did not involve these modern ingredients. We can turn to one or two of the older cases to observe the development of the theories which have now become more crystallized. For example, there is an old Massachusetts case, French v. Vining, 102 Mass. 132 (arising not long after the Civil War). There was no middleman, the defendant being the seller, who sold a quantity of hay to be fed to plaintiff's cow. Some paint, containing white lead, had been spilled on the hay, and although the seller had carefully endeavored to separate and remove the damaged hay, a portion of it must have had some traces of lead remaining in it. After the cow had consumed some of the hay she was found sick, continued sick for about a week and then died. Plaintiff discovered, after the cow died, that some of the hay left in the manger had a few traces of paint on it. The action was brought in tort.

An interesting point, which is of historical importance is, that the defendant tried to persuade the court that the only ground for action in such a case would be on the ground of a warranty of quality in the hay and that, consequently, the measure of damages would be the difference between the value of the hay as it was warranted to be and actually was. He further claimed that, where he had in good faith, endeavored to separate the unwholesome hay that he should not be liable in tort. The court did accede that there was a warranty that the goods were to be fit for a particular purpose. However, it also said that the action in tort was proper where an accident had caused the hay to be dangerous and poisonous, it was an illegal act to sell it to the plaintiff without disclosing what he knew. And the efforts to separate the damaged part did not help the defendant because he did sell an article for animal consumption which he knew had been exposed to poison. His knowledge of what had happened cast the entire responsibility on him and he sold the hay at his peril. Therefore, the measure of damages was not limited to the difference between the values as referred to above.

This old case points out the reason why a negligence suit might be of greater advantage than a breach of warranty, or at least, why an injured party should bring his action on alternative grounds.

Another Interesting Point

Another interesting point in this old case is that where negligence is alleged, there must be proof that there is causal connection between some act, or omission to act and the injury. Furthermore, there was a duty on the plaintiff to seek a veterinarian, if one was available, to prevent the loss of the cow. But whether or not the plaintiff had done what she should have done in this connection was a question for the jury. The outcome on this point was that the defendant had failed to prove that there was a competent veterinary surgeon within reach and therefore the jury was justified in the finding for the plaintiff.

Cases came and went in the following decades throughout the country wherein negligence was alleged, sometimes proved and sometimes not, against manufacturers, packagers and the like. But lawyers, who brought suit in these cases, were up against a rather difficult job. Not only were they hard put to it to prove the causal connection between the manufacturer's act, or omission to act, which was alleged to be negligent, and the injury to the plaintiff, but where the courts demanded considerable proof of negligence, it was not easy to do it because of inaccessibility to the operations in control of the manufacturer and the probability of many other factors entering into the illnesses and deaths of livestock and poultry.

Cases Cited

Even within the present generation a suit against a manufacturer for damages alleged to result from the negligent preparation of a vaccine was not sustained unless the plaintiff could establish that the vaccine was infected when he bought

New UNIT CONVERTS any TRUCK for PIPED-IN-FEEDS by AIR

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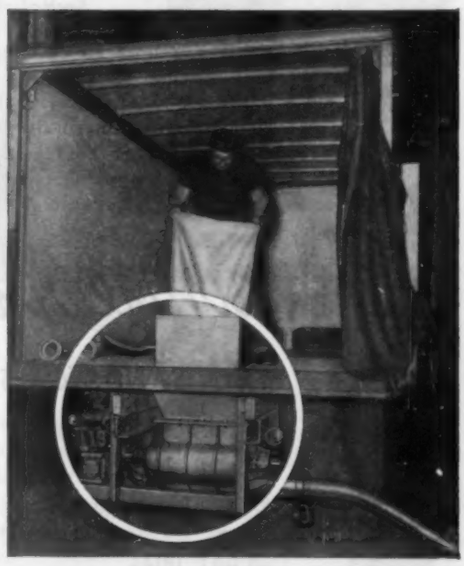

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There are no booms to place, no augers to cause trouble. When permanent piping is installed to farm bins, feed is delivered as easily and as free of dust as fuel oil.

This unit provides the same type of service as a complete bulk tank truck, yet it is surprisingly light in weight and does not restrict the use of the truck for other jobs. When not unloading the opening to the feeder is covered with a plate that fits flush to the bed of the truck.

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it. Failure to establish this by definite proof would bar recovery. Richards v. H. K. Mulford Co., (1916) C. C. A. 236 Fed. 677.

And the fact that hogs, inoculated with cholera virus, and vaccinated with hog cholera serum, died in large numbers after the inoculation, did not, of itself, establish negligence on the part of a manufacturer. Hollingsworth v. Midwest Serum Co., (1918) 183 Iowa 280, 162 N. W. 620.

Another court emphasized the duty of those who inoculate hogs that they must inspect the health, take the temperature of the animals, and perform the work in a manner generally recognized to be skilful. But at the same time the same court said that there would be liability only for such damages as directly resulted from carelessness. Sissell v. Sihler Serum Co. (1922) 110 Kansas 446, 204 Pac. 988.

In the Hollingsworth case the court was considerably impressed by the safeguards which the government, both state and national, surround the business of the production of serums, and intimated that there was more chance of the consumer tainting serums than the manufacturer. Where 210 pigs had been inoculated at the same time, the court thought it would have been much more prudent to have first selected —say, eight pigs and experimented thereon. Therefore, a certain amount of reluctance on the part of the courts to attribute negligence to manufacturers is apparent in the earlier cases.

In Murphy v. Sioux Falls Serum Co., (1923) ——S.D.——, 195 N. W. 835, the same reasoning is observed. In that case plaintiff could not establish negligence by merely showing death of hogs after inoculation. The court pointed to the probability that germs and malignant edema can get into the serum or into instruments during the process of vaccination for which the manufacturer could not be responsible.

THE EVOLUTION OF JUDICIAL ATTITUDE ON THESE MATTERS —It would now appear that the courts have gradually got away from this view that proof of negligence and proximate cause is a strict, and generally, difficult job. The current view seems to favor an easier undertaking on the part of the plaintiff. Whether such change was coincidental, or whether one court followed the leanings of another, or any explanation would be a matter of conjecture. The evidences are offered here for consideration.

There is, for example, Haberer v. Moorman Mfg. Co., (1950) 341 Ill. App. 521, 94 N. E. 2nd 611, in which negligence and proximate cause were established by evidence of a circumstantial nature. Plaintiff's sheep were in good health prior to administering worm medicine; evidence of illness or death after such administering were competent to establish the connection between the administration of the medicine and the casualties among the sheep. No medical testimony was needed to show the causal connection said the court, "where it was clearly apparent from the illness itself and the circumstances attending it."

The case further brought out the rule that where a pre-existing disease condition of the sheep was aggravated by the administration of the worm medicine, it gave cause of action to the sheepowner.

In a well-known case, American Cyanamid Co. v. Fields, 204 F. 2nd 151, (1953) the court made quite an effort to balance the duty of the plaintiff against the duty of defend-

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whether covered with bedding or not, has provided added cow comfort.

ant-manufacturer, and remarked that the burden was on the plaintiff to show that the negligence of the manufacturer was the proximate cause of the loss and that the plaintiff was required to put on evidence showing such negligence and causal connection, and further, that no finding of negligence could be predicated on mere speculation and conjecture. Yet the court did justify a jury's verdict for the plaintiff on the evidence which consisted of testimony that plaintiff mixed a powder manufactured by one of defendant's divisions with some mash prepared and sold by a wholly different company, and because the pullets feeding on that mixture became ill and died, while another flock of older chickens, which fed on the mash but to which the powder had not been added, did not become ill, the verdict for the plaintiff was sustained.

The defendant showed that the powder was a recognized medicine for the treatment of worms in poultry; that it had manufactured and marketed enough of the powder to treat 180 million chickens up to the time of trial, and that no injuries or illness traceable to its product had been reported. The experts also testified, on behalf of the defendant, that the poisoning of the pullets would have caused different conditions in the internal organs than those which appeared from autopsy and medical examination. The court felt, on the whole, however, the plaintiff's evidence was sufficient to sustain the jury's verdict; that, while the defendant's evidence might have justified a finding that there was no negligence, the question of fact was properly left to the jury, and the court was not permitted to substitute another and different conclusion.

SUMMARY OF OTHER CASES

The Law of Warranties as to Feedstuffs, etc., for Animals and Poultry.

A. Some states say not applicable—only where there is human consumption. Such states, however, recognize negligence actions.

Kroger Grocery & Baking Co. v. Woods, 205 Ark. 131, 167 S. W. 2/ 869.

B. Privity of contract necessary—hence, suits not based on breach of warranty where purchase not made from manufacturer. However, certain things may open way to breach of warranty action against manufacturer. For example, in Seaton Ranch Co. v. Montana, 217 P. 2nd 549, @ 555 it is possible to extend a warranty to the public consumers by reason of the way the Montana statute on warranties reads. Some times a manufacturer prints an express warranty which reaches out to the public.

C. Suit may always be brought vs. retailer or dealer from whom products are bought, on breach of warranty. The retailer, of course can always go back at his wholesaler or manufacturer. No liability where the product is bought under a trade name.

D. Alternative actions are often combined as, for example, in International Milling Co. v. Jernigan, (Texas) 191 S. W. 2nd 526, one suit joined the International Milling Company (the millers), also Palestine Grain Corporation, (jobber who sold to retailer) and McLeod (the retail dealer from whom claimant purchased).

Other cases: Judd v. H. S. Coe & Co., Inc. (1933) 117 Conn. 510, 169 A. 270. Death of horse by lead poisoning.

Libke v. Craig, 35 Wash. 2nd 870 (1950) 216 P. 2nd 189. Caked and mouldy hay.

Hall Bros. Hatchery v. Hendrix (1945) 72 Ga. App. 137, 33 S. E. 2nd 370. Action on express warranty on a feed, and chickens failed to develop and many died.

Park v. Moorman, 241 P 2nd. 914. A very good case on express warranty relating to egg productivity if defendant's poultry feed concentrate used.

Damages:

For cases:

Park v. Moorman, 241 P. 2nd 914. A rather complicated formula under which certain elements are added to the damages and then other costs deducted, to arrive at net.

Hall v. Hendrix, 72 Ga. App. 137-33 S. E. 2nd 370, where evidence of profits generally in the poultry industry was admissible on question of damages.

DEAL CLOSED

LORIMOR, IOWA — Dick Hammans has purchased the Eischen Feed & Supply Store here.

Resigns Position

ESTHERVILLE, IOWA — Ed A. Thompson, former vice president and treasurer in charge of sales and finance at Honeymead Co., Estherville, and now director of turkey sales and finance of the Supersweet Feed Co., Estherville division, has resigned to become territorial manager for the Ruud Manufacturing Co. in Iowa and Nebraska.

NEW BUILDING

GRUNDY CENTER, IOWA—Work has started on the construction of a new building for the Connell Farm & Feed Store to be located on Highway 14.

A. E. BAXTER ENGINEERING CO.

Designers and Engineers for Mills, Elevators and Feed Mills

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B. T. (Ben) Overbaugh — P. J. (Phil) Larson — A. R. (Art) Norgren

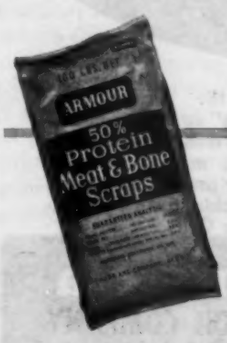
Maney Bros. Mill & Elevator Co. veterans tell why they like to sell

ARMOUR MEAT AND BONE SCRAPS

Having a combined total of 72 years of service with Maney Bros. Mill & Elevator Co., Minneapolis, a leading producer of dairy and poultry feeds and a distributor of ingredients for feed manufacturers, Messrs. Overbaugh, Larson and Norgren are well-qualified to judge feed ingredients. Summed up, they like to sell Armour Meat and Bone Scraps because they have confidence in its quality.

A recent Maney Bros. bulletin enlarges on this point. It says: "Why do feed mixers buy meat scraps, tankage and bone meal? No doubt you would reply by saying that these ingredients help increase egg production and put more meat on meal animals. This is correct IF dependable, high-quality ingredients are used in the formula. Common sense tells us that we actually get the quality of feed ingredients that we pay for. Actually, a lower priced feed ingredient may cost more to use than a higher priced product—in terms of feeding results.

"We use and sell Armour feed ingredients for good reasons. Armour and Company has been in business since 1867, has stood the test of time, has always done right by its customers. Years and years of experience have proved that you can have confidence in the quality of any product they produce—including all feed ingredients that bear the Armour name."



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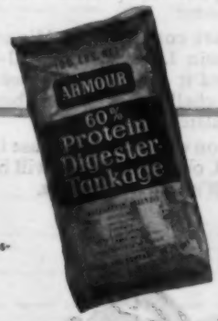

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Feed Service Bulletin Board

Helpful Notes on Feeding and Management for Feed Men and Their Customers

Producing Meaty Hogs

A good feeding program for young pigs from weaning until they weigh at least 100 lb. will help produce meaty hogs, according to W. E. Pugh, University of Missouri extension animal husbandry specialist.

The better they are fed up to this point, the better chance they will have to develop any natural muscling bred into them, he explains. Most muscling is developed while pigs are young and growing fast. Adequate protein, minerals and vitamins are essential in building red meat—and red meat is wanted and needed in the pork business today, Mr. Pugh emphasizes.

Some producers like to handle their pigs in an opposite manner. Pigs are turned out at weaning and are either fed a poor ration or a limited ration until they weigh 125 to 150 lb. After they have developed a "big frame" they are then full fed to market weight.

In these instances, the Missouri specialist states, pigs fail to full develop natural muscling. Carcasses will tend to consist of bone, a lot of fat and not enough red meat in between.

◆

Rubber Mats for Cows

A recent innovation in the field of dairy cattle management in the U.S., the use of rubber mats for cow beds, is reported on in the Massachusetts Dairy Digest published by the University of Massachusetts.

After using them with the university herd during the past winter, Donald Kinsman, assistant to the farm superintendent, makes these comments:

1. We have been conscious of the disadvantages of stanchions which bring the cow's udder in contact with the cold concrete floor whenever the bedding has worked back into the gutter. The rubber insulation between the cow and the concrete, whether covered with bedding or not, has provided added cow comfort.

2. The men in the barn have reported that there is less slipping by the cows in getting in and out and up and down in their stanchions.

3. To date, we have used approximately 50% less bedding in the stanchions with the rubber mats than we are using in the other stanchions.

◆

Poultry Housing Costs

Costs of providing good housing for a laying flock can be cut by increasing the number of birds to allow only 1½ to 2 sq. ft. of floor area per bird instead of the conventional 3 to 5 sq. ft., according to Arthur H. Schulz, extension service engineer for the University of North Dakota.

Good poultry housing is expensive to build or remodel. Mr. Schulz believes that one of the best methods of reducing the cost per bird is simply to add more birds. He reports that during the past several years many North Dakota farmers have successfully crowded their birds with no reduction in production.

However, adequate eating, watering and laying space, and adequate ventilation, must be provided where this crowding is done. Debeaking was also required to reduce cannibalism.

Mr. Schulz has these suggestions for farmers planning to increase the number of birds in their poultry house:

"First, install a good electric fan ventilating system. Install a fan or fans that will provide about 3 cu. ft. of fresh air per minute per bird.

"Provide at least 3 in. of feeder space per hen. The hens won't lay if they don't get enough feed. Install one waterer for each 200 to 250 hens. Automatic waterers installed on the roosts are usually the most satisfactory."

The specialist also recommends one individual nest for each four to five birds or 1 sq. ft. of community nest per six birds.

◆

Pauses in Egg Production

Pauses in egg production in a cage laying set up can be caused by any number of factors. Some of these factors were discussed recently at a Texas A&M College Cage Clinic. Here is information that came out of the sessions:

1. Hereditary pausing—Improvement resulting from competition among breeders and hatcherymen has done much to eliminate this as a possibility.

2. Incomplete rations — Body reserves are depleted resulting in such problems as cage fatigue, thin egg shells, etc.

3. Decreases in the condition or weight of birds—Pullets should consistently gain weight. After maximum body size is reached, good body weight should be maintained. Decreases in body weight usually result in decreases in production. Periodic weighing of a small sample of hens removes some of the guess work.

4. Improper lighting or light intensity may cause a decline in production.

5. Dry water troughs — Water should be kept before birds at all times. It is an essential constituent of life.

6. Improper temperature control—The cage house should be closed during the winter months and opened

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during the summer. Fogging systems or roof sprinkling systems aid in cooling the house in the summer. Fresh, cool water in the summer and warm water (using heating cable on thermostat) aid in maintaining water consumption and the comfort of the birds.

7. External parasites should be kept under control.

◆

Warns Against Dipping Calves

Calves should be at least three months old before dipping or spraying for lice, advises Dr. R. E. Pierson, a Colorado A&M College veterinarian.

In cases of extreme lice infestation where treating young calves is a necessity, he recommends using solutions to just one half the strength of those recommended for older animals.

"Several cases of insecticide poisoning among baby calves already have been reported to us this season," the veterinarian said. "This type of poisoning is so deadly that few calves recover."

Dr. Pierson pointed out young calves are very susceptible to insecticides classified as "chlorinated hydrocarbons." These include benzene hexachloride, DDT, lindane, rothane, toxaphene, chlordane and methoxychlor. "All these insecticides are very effective against lice when used on cattle over three months old and according to manufacturers' directions," Dr. Pierson said. "But on young animals they can cause certain death within hours after treatment. They will affect older animals, too, if solutions stronger than recommended are used."

◆

Multiple Farrowing

H. G. Zavoral, University of Minnesota extension livestock specialist, says the two-litter system of raising hogs has always shown a higher sales return than once-a-year farrowing.

Multiple farrowing—that is, farrowing pigs two, three and even four times a year—will level out marketings and eliminate some of the extreme seasonal low price periods.

Mr. Zavoral says by using buildings over the whole year a farmer can market many more hogs with a smaller investment in buildings and equipment.

By taking two litters of pigs a year from his sows a farmer can sell more pigs as top butchers. A farmer farrowing two groups of sows twice a year would gain a still greater advantage. For instance, a 12-sow farrowing house used four times a year would farrow 48 litters.

Using this system a farmer will get more use from his buildings, and be able to use his labor and equipment the year around. He will also get more top of the market prices with sales of his barrows and gilts, and will be able to market his sows at higher prices.

Mr. Zavoral suggests farrowing quarters be allowed to "rest" 30 days between farrowings. They should be properly disinfected before each new group of sows is brought in. This helps prevent many little pig diseases.

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Use of Automatic Equipment Increases

CHICAGO—More than 220 million broilers and egg-production hens are currently being fed by means of automatic devices, a survey made by the Mechanical Poultry Feeders Assn. shows. Eight years ago, fewer than 1 million chickens were being fed by automatic machines, the report revealed.

Scarcity of farm labor and the expansion of the poultry industry into a 4½ billion dollar a year enterprise were cited as the principal reasons for the changeover from hand to mechanical feeding.

The association went on to say that since 1939 labor costs jumped 300%, compared with a 100% rise on the cost of farm machinery. With automation coming to the poultry farm, the commercial grower has been enabled to treble the size of his flock without adding on additional help, the association said.

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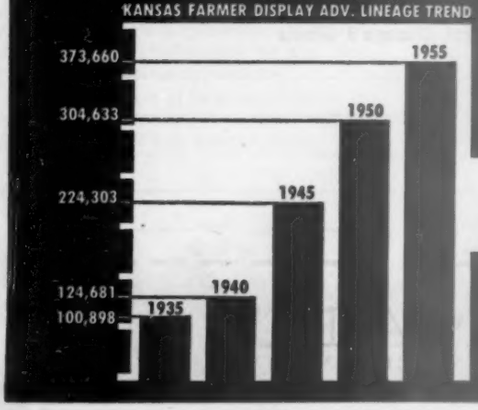

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Survey of Farmers' Reaction to Acreage Allotments Completed

LAFAYETTE, IND.—A survey of farmers' reaction to wheat and corn acreage allotments in 1954 has been completed by the Farm Management Research Committee of the North Central States, it has been reported by Dr. John Dunbar, Purdue University agricultural economist.

More than 700 owner-operated farms with a gross income of $2,500 or more in central Indiana, southern Michigan, western Ohio, northwestern Kentucky, north central Iowa and central Kansas were studied.

The study showed much variation among the six states in compliance with corn allotments, with a range from 15% of farms in Michigan to 67% in Iowa.

Reasons given for compliance were quite variable. In Iowa, where corn is the predominant crop, 60% of the farmers who complied did so in order to be eligible for price supports. However, the greatest single reason why Corn Belt farmers complied was because their allotments just happened to be greater than the acreage of corn they had planned to plant in 1954.

Indiana farmers planted over their corn allotment primarily because they needed the corn to continue a full volume of livestock production, Dr. Dunbar pointed out.

Wide Wheat Compliance

There was also a wide range among states in the percentage of farmers who complied with wheat acreage allotments in 1954. In Kansas, for example, compliance was 99%. Low compliance states were Indiana and Michigan with 58% each.

The two chief reasons given for compliance in all states were to avoid payments of the penalty, and to be eligible for price supports. The main reason why farmers did not comply with allotments was "to avoid disrupting rotations and fields." Surprisingly enough the second most important reason for not complying with wheat allotments in Ohio, Kentucky and Michigan was that farmers needed the wheat for feed.

Among various states studied, Dr. Dunbar said, from 12 to 28% of the farmers increased the rate of fertilizer applications of wheat. However, these increases were offset by others who decreased it. Thus, one conclusion of the study was that there was no unusual attempt to offset wheat allotments by increasing fertilizer application per acre. Rather, there were a series of individual adjustments in fertilizer use which slightly increased average application.

From a third to a half of the farmers interviewed in the various states, except Kansas, said that continuation of acreage allotment and marketing quota programs, as operated in 1954, would have very little or no effect on their farming operations.

Over a third of the farmers interviewed in the Corn Belt believed that control programs would lead to more grass and legumes. Half of the Kansas farmers interviewed said they thought more shifts from wheat to other crops and livestock—more diversification—would take place. It was generally believed that the next most profitable grain crop would be substituted for acreage of corn, wheat and tobacco taken out of production due to allotments.

Most farmers interviewed in the study were of the opinion that acreage allotments would be continued for several years. The primary reason given for this opinion was that allotments are needed to reduce surpluses and maintain farm prices, Dr. Dunbar said.

NEARS COMPLETION

RIPPEY, IOWA—The new building to house C. K. Killam's Feed Store is nearly completed.

Missouri Conference Set for Nov. 12-13

COLUMBIA, MO. — The annual Missouri Feed Conference has been scheduled for Nov. 12-13 at the Memorial Union Building on the University of Missouri campus.

Dr. W. H. Pfander of the Missouri animal husbandry department is chairman of the conference.

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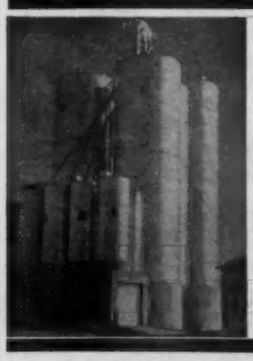

Classifying and blending grains is becoming more and more the country elevator operators' problem. A typical answer is found in the McKenna Grain Company Columbian elevator tanks at Kingman, Kansas. Erected in 1955, this 90,000 bushel installation is equipped with 12' x 24' Columbian classifying tanks.

Combining wheat and grain storage with the feeding of 10,000 head of cattle is a profitable operation for Emporia Elevator & Feeding Co. of Emporia, Kansas. The new Columbian 350,000 bushel bolted steel grain elevator and mixing equipment enables this enterprising company to store grain and tailor-mix their cattle feed economically and efficiently. The ten 26' x 72' bolted steel tanks were erected in time for the 1955 Kansas wheat harvest. Columbian engineers also made the preliminary drawings, designed foundations and installed the mixing tanks and equipment. The elevator is designed for easy expansion by adding tanks.

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USDA Gets Research Suggestions From Poultry Advisory Committee

WASHINGTON—A number of recommendations of interest to feed men were included in a recent report by the U.S. Department of Agriculture's poultry research and marketing advisory committee.

The committee, made up of industry representatives, meets annually and makes recommendations to USDA's Agricultural Research Service.

Among the many recommendations on research and marketing help were these:

PRODUCTION RESEARCH:

Ornithosis — Expand research on the nature of this disease in turkeys, chickens and other birds and animals; the mode of transmission; development of control measures; and initiation of ecological studies.

Poultry vaccines—Expand and initiate studies to establish standards and techniques for elimination of all bacterial contamination and for evaluating the potency and safety of vaccines.

Avian leukosis complex — Expand work on immunization against visceral lymphomatosis.

Poultry physiology — Expand research in poultry physiology to determine the relationships between genetics, nutrition, environment and physiological expressions.

Pesticide residues — Expand research on the determination of residues in meat and eggs following insecticide, fungicide and herbicide applications to animals and to animal forage.

Intermediary metabolism of nutrients—Expand research on the fate of various nutrients in the embryonic, growing and adult bird.

UTILIZATION RESEARCH:

Basic composition studies—Expand composition studies on poultry and eggs to include the identification and characterization of compounds that may be responsible for or involved in toughness, texture, flavor, flavor instability, functional properties, appearance and other quality factors.

Effect of high-fat feeds — Initiate studies on the effect high-fat feeds are having on the nutritive value of the meat from chickens, turkeys and their products.

MARKETING RESEARCH:

Effects of sanitary requirements and poultry inspection—Initiate research to evaluate probable effects of alternative programs of sanitary processing and inspection of poultry for wholesomeness on costs of marketing poultry, organization of industry, marketing practices and related economic factors.

Egg quality—Initiate research to develop chemical and physical-chemical methods for determining quality of fresh and market eggs.

Mechanical grading — Expand research on mechanical grading of eggs to pilot plant basis so that methods so far developed can be tested under plant conditions.

MARKET SERVICE

Broiler reports—Expand efforts to determine with accuracy the weekly placement of broiler chicks.

Feed fed to poultry—Initiate a survey by states on the amount and kinds of feed fed to farm and commercial poultry flocks as a basis for calculating the cost of farm poultry rations.

Market information—Expand dissemination of market and outlook information to encourage use of such information on the part of those making decisions regarding production and marketing of poultry products.

International Minerals Names New Supervisor

CHICAGO — Max H. Forster has been appointed to the newly-created position of management development supervisor of International Minerals & Chemical Corp., it has been announced by A. R. Cahill, vice president of the finance division.

In this capacity he will act as staff specialist on selection and development of managerial and technical personnel throughout the corporation. He will report to A. C. Thornton, personnel and industrial relations manager, and will be headquartered at the company's general offices in Chicago.

Mr. Forster has most recently served as training director for S. C. Johnson & Son, Inc., Racine, Wis.

CONVENTION CALENDAR

(Continued from page 46)

Nutrition Conference; North Carolina State College, Raleigh, N.C.

1957

Jan. 7-8—Kansas Formula Feed Conference, Kansas State College, Manhattan; chmn., F. W. Atkeson, head of department of dairy husbandry, Kansas State College, Manhattan.

Jan. 8-10—National Turkey Federation, Cincinnati, Ohio; exec. sec., M. C. Small, P.O. Box 69, Mt. Morris, Ill.

Jan. 28-30—Southeastern Poultry & Egg Assn.; Dinkler-Plaza Hotel, Atlanta; exec. sec., J. Paul Williams, 615 E. Franklin St., Richmond 19, Va.

Feb. 4-6—Assn. of Southern Agricultural Workers, Birmingham, Ala.

Feb. 10-12—Wyoming Grain, Feed & Seed Dealers Assn.; Casper; sec., Everett L. Berry, P.O. Box 118, Sheridan, Wyo.

Feb. 15-17—Institute of American Poultry Industries Fact Finding Conference; Municipal Auditorium, Kansas City, Mo.; pres., Cliff D. Carpenter, 221 North LaSalle St., Chicago 1, Ill.

Feb. 17-19—Midwest Feed Manufacturers Assn., Broadmoor Hotel, Colorado Springs, Colo.; exec. vice pres., Lloyd Larson, 20 W. 9th St. Bldg., Kansas City 5, Mo.

March 13—Distillers Feed Conference; Sheraton-Gibson Hotel, Cincinnati, Ohio; exec. director, Lawrence E. Carpenter, 1232 Enquirer Bldg., Cincinnati, Ohio.

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Following are reviews of some of the cattle feeding experiments reported at the annual Indiana Cattle Feeders Day, Purdue University, Lafayette, Ind. (Other Purdue reports were reviewed in this department in the May 12 issue.)

Self-Feeding Various Ratios of Ground Ear Corn to Supplement A for Fattening Cattle

● T. W. Perry, M. T. Mohler and W. M. Beeson, Department of Animal Husbandry, Purdue University; Mimeo A.H. 163, April 27, 1956 (Progress Report).

In various Purdue experiments, fattening cattle which were self-fed gained more rapidly than hand-fed cattle, but the self-fed lots consumed a greater amount of protein supplement than is considered necessary for fattening cattle. In order to obtain information concerning the optimum amount of protein supplement to feed in a mixed ration for steers, an experiment was conducted in which mixed rations containing various ratios of ground ear corn to Purdue Supplement A were self-fed to fattening steers.

Sixty Hereford yearling steers with an average initial weight of 634 lb. were allotted into five lots of 12 steers each. The experimental rations for the five lots consisted of ground ear corn and Purdue Supplement A mixed in the following ratios of corn to supplement: 4 to 1; 6 to 1; 8 to 1; 10 to 1, and 12 to 1. Each lot of steers had free access to a mineral mixture of two parts steamed bone meal and one part salt plus loose salt. On the first day of the experiment, the feed troughs were filled with the mixed rations and the steers were turned into the lots. Mixed hay was available to all lots the first 28 days of the experiment, but was discontinued at that time because the steers consumed an average of only 2 lb. of hay per day.

The experimental results at the end of 161 days on feed are presented in Table 1.

The results indicate that the steers made satisfactory gains on rations which after the first 28 days contained no source of roughage other than the cob portion of ground ear corn. It was observed that excessive looseness and scouring occurred during the first week to ten days in the lots fed the 10 to 1 and 12 to 1 ratios of ground ear corn to Supplement A. Droppings were observed to be somewhat thinner than normal in the other lots, but no excessive scouring developed. The droppings became normal after one week to ten days and no further changes were observed.

The best results in terms of gains and feed efficiency were obtained with the ration containing ground ear corn and Purdue Supplement A mixed in an 8 to 1 ratio and the Purdue investigators recommend this ratio of ground ear corn to Supplement A for feeders who desire to use this method of feeding.

The researchers reported the finish of steers fed the 10 to 1 and 12 to 1 ratios of ground ear corn to Supplement A was less uniform than on the steers in the lots fed the 6 to 1 and 8 to 1 ratios. ●

A Comparison of Two Levels of Protein Supplement with Self-Fed Supplement for Fattening Cattle

● T. W. Perry, C. H. Nickel, Donald Webb and W. M. Beeson, Animal Husbandry Department, Purdue University; Mimeo A.H. 172, April 27, 1956.

In this experiment, different methods of feeding a ration of ground ear corn and Purdue Supplement A to fattening steers were tested. Two lots of steers were hand fed (twice daily) a full-feed of ground ear corn plus either 2 or 3.5 lb. of Purdue Supplement A per steer daily. A third lot was self-fed ground ear corn and Purdue Supplement A by a free choice method whereby the two feeds were fed in different troughs so that the steers had free access to ground ear corn and Purdue Supplement A. In addition, hay and minerals were fed free choice in all three lots. Sixty yearling Shorthorn steers with an average initial weight of 650 lb. were allotted into three lots of 20 steers each.

The results of the 130-day feeding trial are presented in Table 2.

The most rapid and efficient gains were made by the steers which were self fed a free choice ration of ground ear corn, Purdue Supplement A, hay and minerals. Steers hand-fed either 2 or 3.5 lb. of Purdue Supplement A along with a full feed of ground ear corn plus hay and minerals gained at the same daily rate. However, the steers fed the lower level of supplement required slightly less feed per 100 lb. gain and had a lower feed cost per 100 lb. gain than those fed the higher level of supplement. The lot of steers self-fed a free choice ration required less feed per 100 lb. gain than the other two lots, but had a higher feed cost per unit of gain because of a higher rate (7.6 lb. per steer daily) of supplement consumption.

The dressing percent was the same for the steers in the two handfed lots, but was 2% higher for the steers in the self-fed lot. There were no significant differences in carcass grades among the three lots of steers. Market value was highest for the self-fed lot, was somewhat lower for the hand-fed lot receiving 3.5 lb. supple-

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Table 1

Nov. 8, 1955, to April 17, 1956—161 Days—12 Steers Per Lot

Ratio ground ear corn to supplement	Average daily gain, lb.	Daily feed consumption gr. corn & supp.	Feed per cwt. gain	Feed cost per lb. gain
4:1	2.38	19.8	833	20.1c
6:1	2.61	22.2	851	19.6c
8:1	2.61	21.5	825	18.4c
10:1	2.50	20.7	829	18.2c
12:1	2.26	20.0	887	19.1c

Table 2

April 8 to Aug. 16, 1955—130 Days—20 Steers Per Lot

	2 lb. Supp. hand fed	3.5 lb. Supp. hand fed	Supp. & corn self-fed free choice
Average daily gain, lb.	2.35	2.34	2.58
Daily feed consumption, lb.—			
Ground ear corn	14.4	13.8	11.9
Supplement	2.0	3.5	7.6
Hay	11.4	10.9	7.7
Total feed per 100 lb. gain, lb.	1,184	1,202	1,051
Feed cost per 100 lb. gain	$20.76	$22.76	$24.46
Dressing, %	60.6	60.7	62.7
Carcass grade—			
U.S. choice	18	20	20
U.S. good	2	...	...
Selling price per cwt.	$22.25	$22.75	$23.00

ment and lowest for the hand-fed lot receiving 2 lb. of supplement.

COMMENTS:

The experiment with varying ratios of ground ear corn to supplement is a further demonstration that the cob portion of ear corn can serve satisfactorily to provide the roughage needed in a fattening ration for cattle. The steers in this experiment consumed between 20 and 22 lb. of ground ear corn per day, of which approximately 5 lb. was corn cob. This amount of corn cobs is about the same as the amount of hay that would ordinarily be fed to fattening cattle receiving a full-feed of corn.

However, it seems important to keep in mind that corn cobs do not contribute any usable protein to the ration so that somewhat more protein supplement is needed in this type of a ration to make up for the protein that would be supplied by hay if it were fed.

The lot of steers fed the 8 to 1 ratio of ground ear corn to supplement (which gave the best results) received 2.4 lb. of supplement per steer daily. It is interesting to note that poorer gains and scouring resulted in the two lots fed the highest ratios of ground ear corn (10 to 1 and 12 to 1) to supplement, or in other words, the lots in which considerably less supplement (1.5 to 1.9 lb. per steer per day) was fed.

The results of the second experiment suggest that although steers apparently make rapid gains under a free choice method of feeding, the rate of supplement consumption may be higher than necessary, resulting in increased feed costs. However, it should be noted that this relatively high rate of supplement consumption did not have any adverse effects whatever and may have been responsible, at least in part, for the increased carcass yield and somewhat higher selling price when the steers were marketed.

It would seem that free choice feeding of grain, supplement and hay to fattening cattle needs some further testing before final conclusions are drawn as to its practical value and that for most economical results supplement feeding should be regulated according to the amounts recommended by the manufacturer.

USDA Report of Feedstuffs Production

(In tons, 000's omitted)

Feedstuffs—	Monthly production— March, 1956*	Feb., 1956	March, 1955	Season's production— Oct.-Mar., 1955-56	Oct.-Mar., 1954-55	Oct., '54-Sept., '55
Soybean meal	584.4	563.2	444.3	3,427.0	2,877.6	5,704.8
Cottonseed meal	230.0	207.7	218.9	1,854.6	1,711.3	2,515.4
Linseed meal	58.3	54.9	58.4	371.5	304.4	544.8
Peanut meal	6.0	5.9	1.8	21.4	11.5	18.5
Copra meal	8.6	7.4	9.8	55.6	57.1	117.4
Total oilseed meals	887.3	919.1	733.2	5,730.1	4,961.9	8,900.9
Wheat millfeeds	373.8	347.3	394.2	2,272.4	2,302.4	4,477.1
Rice millfeeds	11.0	13.8	19.2	95.6	106.6	303.0
Gluten feed and meal	86.7	66.2	86.6	493.4	505.1	1,004.6
Distillers dried grains	26.2	24.2	23.0	158.5	130.0	249.9
Brewers dried grains	20.6	17.7	19.6	106.4	99.7	238.4
Alfalfa meal	26.1	21.2	36.2	247.8	283.4	1,398.6
Total mill products	543.7	490.4	578.8	3,374.1	3,427.2	7,671.6
Total feedstuffs	1,431.0	1,409.5	1,312.0	9,104.2	8,389.1	16,572.5

*Preliminary.

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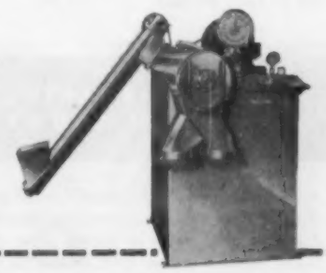

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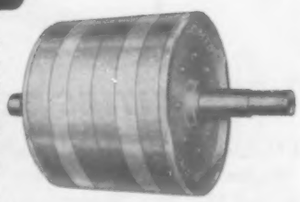

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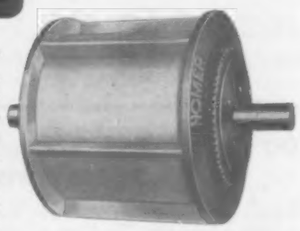

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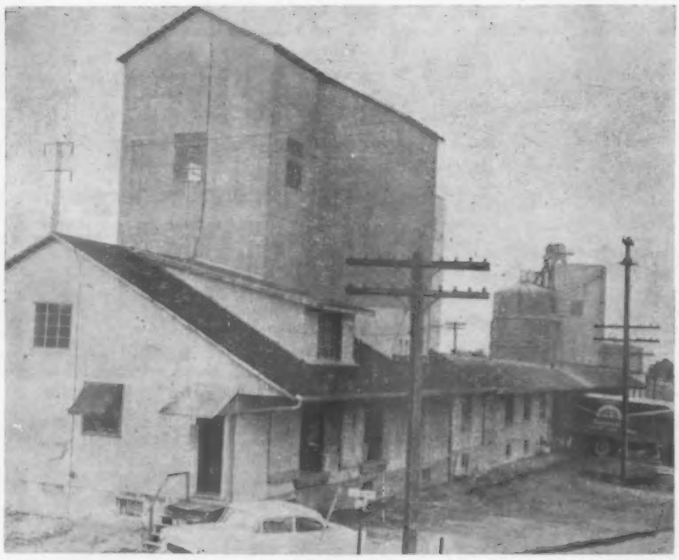

MODERNIZED MILL—The mill of Hudson Mills, Inc., at Okolona, Ohio, is an example of a small feed plant that has been modernized to improve service and business and lower production costs. This mill produces 6,500 tons of animal feed concentrates, which it distributes to feed dealers and manufacturers in the area, and it manufactures about 1,000 tons of finished poultry feeds each year. Karl Helberg is president of the firm, and his son Alfred is general manager. New machinery has been installed during the past few years and bulk storage facilities (Permaglas structures) were established for handling ingredients in carload lots. Sprout-Waldron pneumatic handling, pelleting and other equipment has been installed in the mill. One pneumatic system is used for unloading bulk ingredients—including soybean meal, gluten meal and feed and meat scraps and tankage at present—and one is used for handling pellets. The firm employs six workmen in the plant, two truck drivers and three salesmen.

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Economist Notes Prospects for Higher Fat Cattle Prices

LAFAYETTE, IND. — A Purdue University agricultural economist, M. Paul Mitchell, points out that higher market prices are in prospect for fat cattle in the next few months. The basis for the prospective improvement in prices is the probable smaller supply of grain-fed cattle ready for market.

Prof. Mitchell noted that a recent U.S. Department of Agriculture cattle report showed a reduction of 8% in the number of cattle on feed April 1 in the 14 principal feeding states as compared with a year earlier.

According to Prof. Mitchell, this supply of cattle should permit prices to rise to the levels of a year earlier, if not above those levels. Even though April prices rose about $2 cwt. since the February low of this year, prices were still averaging almost $4 below the levels of April, 1955. Higher grades of market cattle show relatively greater price declines than lower grades, and probably are in a position to be benefited most by an improving market situation.

The reduction in cattle feeding operations reported for the principal feeding states is a reversal of the trend followed in 1955, when each quarterly report showed progressive increases percentagewise over the levels of the preceding year. Chief cause for the current cutback in feeding operations is undoubtedly the low profit or loss incurred during the 1955 feeding year.

Although an overall reduction is indicated in the number of cattle being grain-fed, some additional time will be needed to work out from under the burdensome supplies which accumulated during 1955. Thus, on April 1, there were still 10% more cattle above 1,100 lb. in weight, and, when measured by the length of time on feed, 26% more than had been on feed six months or more. Since six to seven months may be considered as a normal feeding period and 1,100 pounds as above the normal market weight, most of these long-fed, heavy cattle, should be marketed by this time or shortly. This should leave a potential supply of fed cattle for the summer and early fall months fully 15% below the supply levels of the same months in 1955, with materially higher prices prevailing.

While some improvement is in prospect for the summer fed cattle market, Prof. Mitchell advises against building too much confidence in more distant cattle markets. Beef cattle numbers are at record levels, having increased by 22 million head since the turn of the cattle cycle in 1948. The record calf crop of 1955 will largely account for the marketings of fed cattle during the next year. The fact that a reduced supply is in prospect for the summer months could be interpreted to mean that larger marketings would likely come later. Possible adverse weather and crop conditions could cause considerable distress within the industry if forced liquidation becomes necessary.

Grain Barter Deals Listed by USDA

WASHINGTON—Wheat made up a major share of total agricultural commodities exported during the January-March quarter under barter arrangements made by the U.S. Department of Agriculture.

The barter contracts provide for the exchange of Commodity Credit Corp.-owned farm commodities for strategic "stockpile" materials for CCC's account, as well as non-strategic or supply materials for other government agencies.

Agricultural commodities exported by barter contractors totaled $49,423,000 for the January-March period. Major commodity exports in the period under the program were: Wheat, $27,699,000 (15,903,000 bu.); corn, $13,180,000 (9,530,000 bu.); cotton $5,311,000 (51,000 bales); grain sorghums, $1,651,000 (799,000 cwt.); barley, $1,239,000 (1,393,000 bu.); oats, $322,000 (569,000 bu.); and rye, $21,000 (19,000 bu.).

Barter contracts having an export value of $165,611,000 were negotiated by the CCC in the January-March 1956 quarter, bringing the total value of contracts negotiated in the nine-month period July 1, 1955-March 31, 1956, to $214,711,000.

CCC will continue to barter agricultural commodities for a number of materials, including mostly metals and ores. USDA explains that CCC's ability to conclude barter proposals for any material from time-to-time will depend upon availability of materials required, existing commitments and market conditions. The Barter and Stockpiling Division, Commodity Stabilization Service, U.S. Department of Agriculture, is handling the program.

ASSISTANT SECRETARY NAMED

MANHATTAN, KANSAS—Thomas C. Roberts has been appointed assistant secretary of the Kansas Crop Improvement Assn., effective May 28. He also will hold the rank of instructor in the Kansas State College department of agronomy. He received his B.S. in agricultural education from Kansas State College in 1950. The past three years he has taught vocational agriculture at Lyndon high school.

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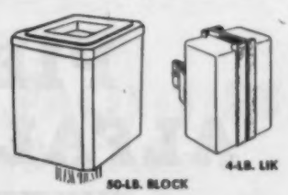

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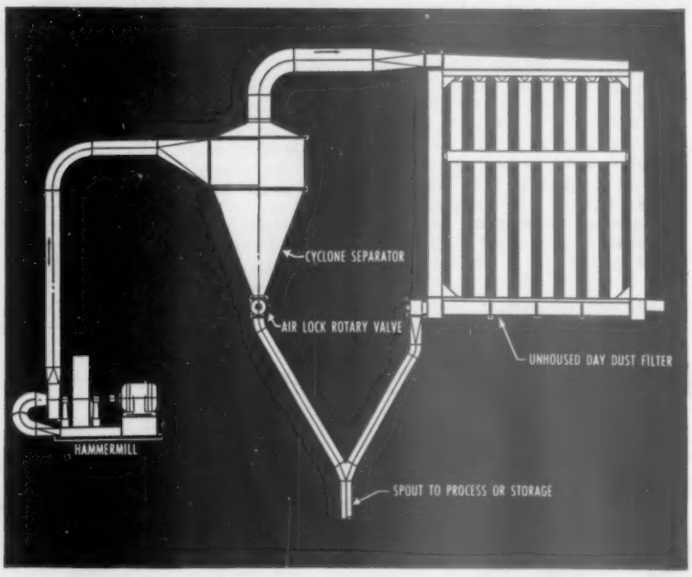

Diagram above shows hammermill installation with DAY dust filter receiving exhaust air from cyclone. Plant after plant report "fines" captured (and returned to process or bins) by their DAY filter reduce invisible feed loss by as much as 85%. This product saving will help pay for a DAY filter in a short time and produce extra profits.

Cutaway view of DAY "AC" Dust Filter. Licensed by H. J. Hersey, Jr.

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UP OR DOWN?

By Leonard W. Schruben

Agricultural Economist, Kansas State College

Changing Technology and Feed Requirements

Will the next 25 years see an expansion in the feed required to grow enough livestock to feed our people? Many people would like to have assurance they have the correct answer to this queston, including the writer.

Several indicators are valuable in answering this question, and it will be useful to look at them even though no one can guarantee what the future will bring. After all, decisions are made on the basis of an assumed-to-be-correct answer, and several important points may be overlooked.

The answer is related to the farm surplus problem. Frequently one hears that the surplus problem will go away as population increases. Why is this assertion made? Will increased demands for livestock products require more feed?

Several assumptions are necessary to reach the conclusion that the surplus problem will go away. One is that population will increase more rapidly than food supply and therefore surplus grain and feed will be used to produce livestock to provide additional food. Often overlooked is the rapid technological advance in livestock efficiency, even among feed manufacturers who have contributed greatly to these advances.

The accompanying exhibits will show you some changes that have taken place in our economy. Exhibit 1 gives you a picture of a change in the industrial part of the economy. Exhibit 2 pictures a change in the number of eggs per bird as an example of changes in the agricultural part of the economy.

It now requires about 15 minutes for production workers in manufacturing industries to earn the price of one pound of chuck roast. In 1948 it required about 30 minutes. Wages have gone up while prices of chuck roast have gone down. But a considerable part of this change has been possible due to improvements in productive efficiency. Of course, this relationship changes from time to time as both prices and wage rates change, but the trend points only one direction.

Exhibit 2 shows the change in the number of eggs produced per hen. Although recent revisions in the number of eggs produced would modify the chart a small amount, the trend is upward. Similar improvements in pounds of livestock produced per 100 lb. of feed have been made with other kinds of animals as anyone familiar with the feed trade knows.

There is reason to assume technical improvements in animal agriculture

EXHIBIT 1—Amount of working time required of production workers in manufacturing industries to buy 1 lb. of chuck roast (average retail price) and 100 lb. of live beef (farm price), U.S. averages, 1945-55.

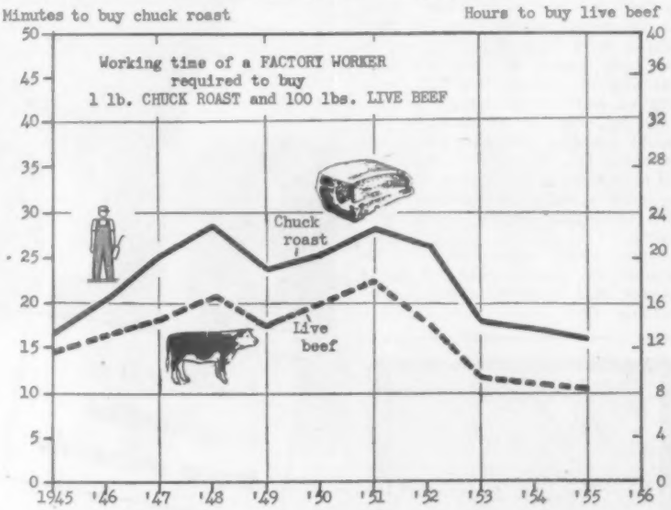
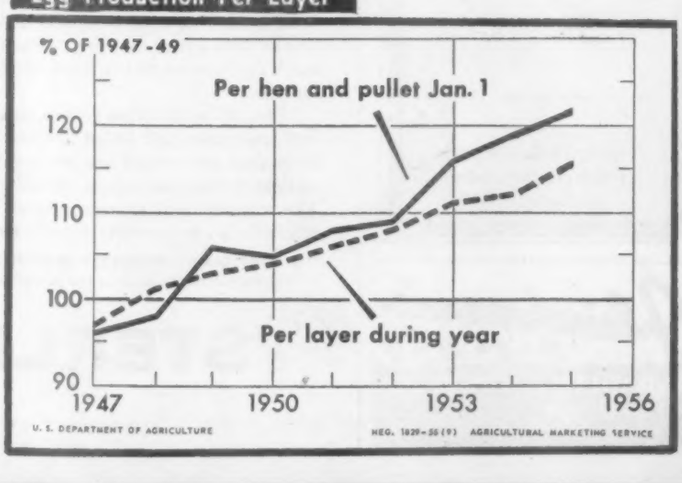


EXHIBIT 2—Index of egg production per bird, 1947-55.



Dr. Jean F. Verbeeck

JOINS DOUGLAS STAFF—Dr. Jean F. Verbeeck has joined the staff of the Douglas Chemical Corp., Evanston, Ill., as plant superintendent and director of research. The announcement was made by Mrs. Edith Douglas, who succeeds her late husband, Rene H. Douglas, as president of Douglas. Dr. Verbeeck received his degree in chemistry and graduate degree of chemical engineer in agricultural industries from the University of Louvain, Belgium, where he was also assistant to the directors of research in plant diseases and science of soils for several years. For his activities with the Belgian underground during the war, he was awarded the distinguished service medal.

will continue to be made. Certainly, recent developments in food preservation, animal and plant breeding, crop production and animal nutrition point to more rapid technological change than ever yet experienced. Truly, one must run these days to stand still.

What does this mean to the manufactured feed industry? For one thing, feed dealers cannot sit with folded hands expecting a growing population to create a new market. It is quite possible for nutritional improvements to more than keep pace with increased population. In this case, fewer pounds of feed will be used to produce the additional livestock needed. This may turn out to be incorrect, but alert management will not dismiss the possibility without giving it considerable thought.

John C. Kephart Joins Industrial Laboratories

DENVER, COLO.—John C. Kephart, formerly chief chemist and director of research for the National Alfalfa Dehydrating & Milling Co., has joined the Industrial Laboratories Co., 1729 Clay St., Denver, and will be in charge of an expanded service for alfalfa dehydrators offered by the firm.

Mr. Kephart has been associated with the alfalfa industry for many years and was formerly a member of the research council of the American Dehydrators Assn.

The new service will cover all phases of alfalfa production and quality control, the Industrial Laboratories announcement said, including soil evaluation, processing and carotene preservation methods, and product analysis.

THOMAS FRANK KILLED

SAN FRANCISCO — Thomas Frank, 56, executive vice president of the Wilbur-Ellis Co. here, feed importer and exporter, was killed instantly recently in a head-on collision while he was driving to Asilomar, Cal., to attend a convention. Mr. Frank was one of the founders of the Wilbur-Ellis Co., with which firm he had been associated continuously for more than 30 years. According to reports by highway policeman, the automobile which struck Mr. Frank's car crossed the center line. He is survived by his widow, twin daughters, Susan and Mary, 23, and a son, Peter, 18.

Pfizer Announces $20,000 Livestock Judging Contest

NEW YORK — The agricultural sales division of Chas. Pfizer & Co., Inc., has announced its fourth annual national livestock judging contest with $20,000 in prizes to be awarded. The contest is aimed at expanding the market for high level feeds, according to P. Jerome Thompson, director of the Pfizer division. Added to the contest this year has been a special section for members of the feed industry in which 250 prizes will be awarded.

This year's $20,000 contest is exclusively for the 480,000 members of the Future Farmers of America. Top winners named in each state and Hawaii and Alaska will compete in the grand finals at Kansas City at the time of the FFA convention.

Five grand prize winners will be named at Kansas City. The first prize will be $2,000, second prize $1,000, third $500, fourth $300 and fifth $200. In the state contests the first place winner will get $100 and a free trip to Kansas City. Second and third place winners will get $50 and $25, respectively.

The rules of the contest require contestants to judge photos of pigs, cows and chickens on the special entry blank according to their production ability, and market value, in the case of pigs. Each entry must be accompanied by an analysis tag from a bag of feed that contains 100 grams or more of any antibiotic per ton of feed.

A new feature of the contest is a special feed industry judging contest in which 250 prizes are offered. Entrants will judge the same photos as the FFA boys. The first five prizes will be a box of cheese each month for a year. The sixth through 250th prizes will be 5 lb. of cheese.

Only members of the feed industry are eligible to enter this phase of the contest which closes May 31, 1956.

NEW sales-boosting deal for dealers

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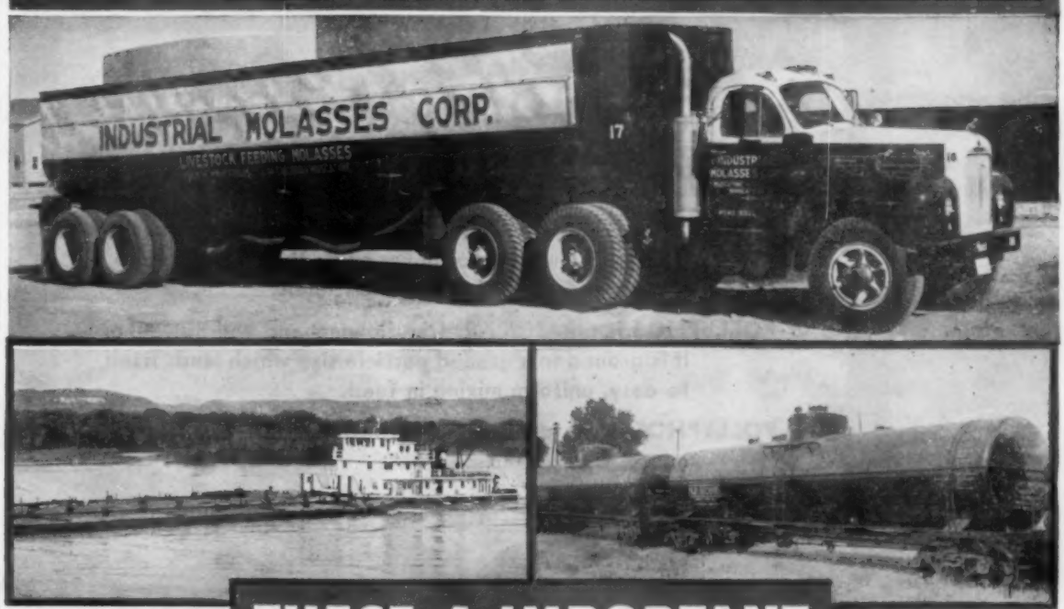

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- A GUARANTEED year 'round supply of molasses. No seasonal delays.
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- AN EXCLUSIVE SOURCE of sugar beet pulp with service to meet customer's needs.

PLUS **UP-TO-DATE HANDLING FACILITIES**

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- BLACKSTRAP
- BEET MOLASSES
- B & B BLEND (Blackstrap and Beet)

Fast, dependable service is our specialty. Our fleets of tank-cars, tank-trucks and barge shipments assure prompt service at lower handling costs!

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PREMIER PEAT LITTER

Premier absorbs up to **20** times its weight—
other materials absorb up to **5** times their weight
Premier absorbs up to **15** times more!

It is ABSORBENCY in litter that counts

- Absorbs quicker
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Burlap or veneer

All plastic inside & outside

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DRIED BREWERS' GRAINS

MALT SPROUTS

Cottonseed Meal
Distillers' Grains
Old Process Oil Meal

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Poultry Export Promotion Set

WASHINGTON—Poultry and feed industry efforts to stimulate export sales of U.S. poultry products were given a formal boost recently with a U.S. Department of Agriculture announcement that it had entered into an agreement with the industry to expand foreign markets for poultry and eggs and their products.

The program will be conducted under an agreement between USDA and the Institute of American Poultry Industries. Organizations taking part include the American Feed Manufacturers Assn., the Poultry and Egg National Board, National Turkey Federation, National Broiler Council and American Poultry and Hatchery Federation. These groups have subscribed funds to aid in the program.

The agreement provides for surveys of the problems and possibilities of developing new markets for poultry, eggs and their products in foreign countries. On the basis of these surveys, projects placing special emphasis on sales promotion, distribution of education materials, market research and related activities will be developed and carried out.

The program is being made possible through use of local currencies available under Title I of Public Law 480. Under this Act, a portion of such currencies received in payment for U.S. agricultural commodities may be used to develop new markets abroad for such commodities.

Forrest D. Larson

DAY CO. REPRESENTATIVE—Forrest D. Larson of Tacoma, Wash., has been appointed a sales representative for The Day Co., Minneapolis, dust control system and equipment manufacturer. The appointment was announced by R. E. Gorgen, vice president and sales manager of The Day Co. Mr. Larson will cover Washington, Oregon and northern Idaho. In addition to representing Day, he will provide a full line of other equipment for the feed, flour and other industries. Mr. Larson, a metallurgical engineering graduate of the University of Minnesota, formerly was with a steel firm and a hammermill manufacturer.

Range Management Unit Plans Meeting

CHAMA, N.M. — Elimination of sage, junipers, and other non-economic plants will be stressed at the annual meeting of the New Mexico Section of the American Society of Range Management June 15-16 here, according to Walter Nations of Albuquerque, section chairman.

The annual affair will get underway at 1 p.m. June 15 with a tour of the Chama Land & Cattle Co. The evening program will include a dinner and talks by John D. Freeman, president, American Society of Land Management; P. E. Neale, professor of animal husbandry; and Ivan Watson, extension animal husbandman, New Mexico A&M College. Officers of the New Mexico Section will hold a brief meeting after the dinner and talks.

The program for June 16 tentatively calls for a tour of another ranch, talks by ranchers and personnel of the Forest Service, Soil Conservation Service, State Game and Fish Department, and State Extension Service, Mr. Nations says.

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3% Stabilized Animal Fat
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- INCREASED production assures continuous supply.
- FREE-FLOWING Solulac will not cake or set-up in bag or bin. Easy mixing.
- GIVES YOU high nutritional values plus advantages of unknown growth factors and vitamins.
- AVAILABLE in 50 or 100 lb. bags . . . or bulk carloads.

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Average analysis of SOLULAC

Protein	26 %	Pantothenic Acid	8 mgs./lb.
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Fiber	6.5%	Choline	2000 mgs./lb.
Riboflavin	8 mgs./lb.		

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Air view of Grain Processing Corporation plants

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Riboflavin—Vitamin B-12—GP-101, source of whey and other unidentified growth factors

New Precision Equipment Used In Ray Ewing Mixing Plants

New precision vitamin premixing and blending equipment and automatic packaging machines are features of all the new plants of The Ray Ewing Company, Pasadena, Cal.

The new units are considered unique in the feed industry. They were designed and engineered by the Ray Ewing firm, followed by three years of testing and developing.

The latest plant to have this equipment is the fourth in a series of mixing plants for the Ewing company. It was opened May 1 at Lancaster, Pa. This newest plant will manufacture feed supplements, fortifiers and custom premixes for distribution to feed mills throughout the northeastern states. Earl R. Reeves is eastern sales representative for The Ray Ewing Company at Lancaster.

A similar new plant was opened in March in Fort Worth, Texas, to serve feed manufacturers in southwestern states. Mr. Ewing says that additional plants are planned for other sections of the country to provide the fastest possible service to customers and to effect freight savings.

The company's main offices and plant are located in Pasadena. Another unit has been operating in Council Bluffs, Iowa, for several years.

Precision and automation were the key words in the planning and developing stages of the new equipment. To insure absolute precision in the premixing and main mixing equipment, the mixing ribbons were actually ground-in to the mixer shell with valve grinding compound to guarantee complete and uniform contact with every square inch of the mixing area. When absolute precision was attained, the mixing ribbon units were then shimmed up to a hairline clearance of less than 1/32 in.

Another feature of the main mixer is that the mixing ribbons move the material toward the discharge gates in the center of the shell, permitting a quick and complete discharge of every ounce of each batch. The design of the discharge gate is so accurately fitted and ground to the contour of the mixer shell that there is no lodging place for material, and therefore it is impossible for any carryover from one batch to the next.

To avoid any possibility of lumps, all USP type of ingredients are put through a brush-type fine-screen sifter before going into the premixer.

The entire unit, including the 2,500-lb. capacity main mixer, motors, switches, scales, bagging machines, sewing machines and conveyors, is so compactly designed that it occupies only about a 10 by 20 ft. floor area. All motors and switches are explosion-proof and made to conform to the national code. Auxiliary units, such as the small pre-mixer and the 200-lb. high-speed beater premixer used for incorporating liquid or oily type ingredients and the 2-oz. graduated scale are mounted on casters to provide maximum mobility and better utilization of floor space.

The top picture shows the newest mixing plant and warehouse for Ray Ewing products, located at 1133 Manheim Pike, Lancaster, Pa. In the bottom picture is the new mixing plant and warehouse in Fort Worth, Texas.

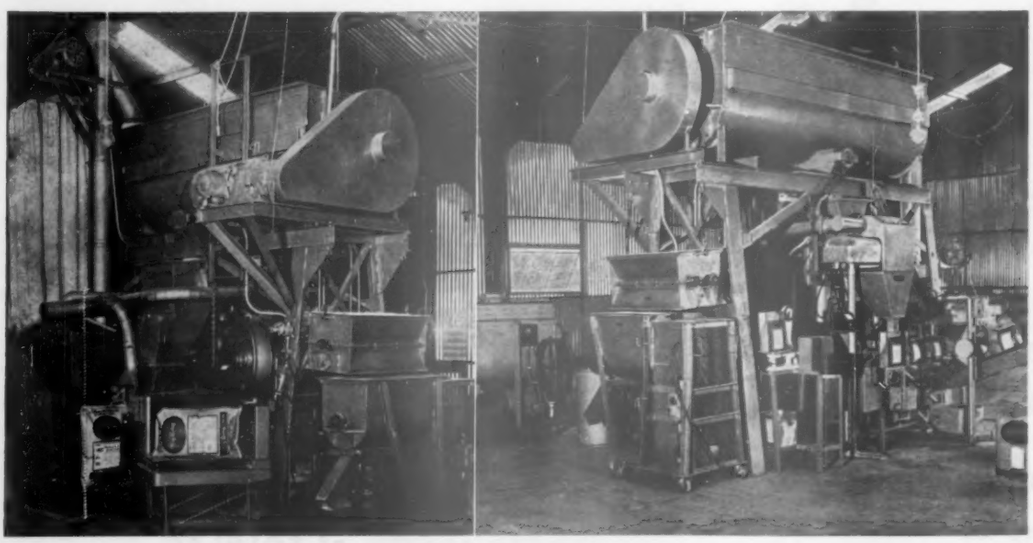
The entire plant is so efficiently designed and equipped that it is possible for one man to handle the entire mixing and packaging operation if necessary. With two men on duty, it is possible to sack both 50-lb. bags and the smaller 5-10 lb. bags at the same time from the same mix and maintain a continuous production cycle.

Another ingenious device is a remote control, electronically-operated scale adjustment. In check-weighing small packages, the operator simply pushes a button to either decrease or increase the weights to the extent necessary for correction. The amount of the adjustment is regulated by the length of time during which the push button closes the circuit.

The small packaging unit is completely automatic. Special metal fingers take the sack off the supply tube, close it and position it on a conveyor. The sacks move along the conveyor through the sewing machine where the top of the bag is sewed and trimmed, then up a conveyor ramp to a slide where they are assembled for packing in a master 60-lb. baler. Twelve 5-lb. or six 10-lb. packages are packed in each baler. All packages have printed labels.

The built-in dust collection system takes all dust away from the feed-in hopper as well as both bagging units and returns it to the feed-in hopper.

Periodic color tests are made to check the accuracy of the mixing units. Five grams of a certified food coloring are added to one end of a batch in the mixer. After two minutes' mixing time, 10 grams of the premix are taken from each end of the mixer as well as from the center and placed in three flasks of equal amounts of water. The color reaction is identical in all three samples.



The picture on the left provides one view of the new mixing and packaging unit being installed in all The Ray Ewing Company plants. This side of the unit shows ingredient dump, screw lift to main mixer atop the center frame and the dust collection unit at the left. The sacking unit for 50-lb. valve bags is in the foreground with the checkweighing scale. At the right is the special premix equipment and attachment for screening lumpy ingredients. This mobile premixer can be rolled around and discharged at the loading dump of the main mixer. The picture on the right is a reverse view of the new mixing unit. This side of the unit shows the 2,500-lb. main mixer atop the central frame and the 5-10 lb. packaging unit in the center. At the left is the special premixer and screen for eliminating lumpy materials. In the background, far left, may be seen part of an auxiliary high-speed mixer on casters for incorporating oils in certain premixes.

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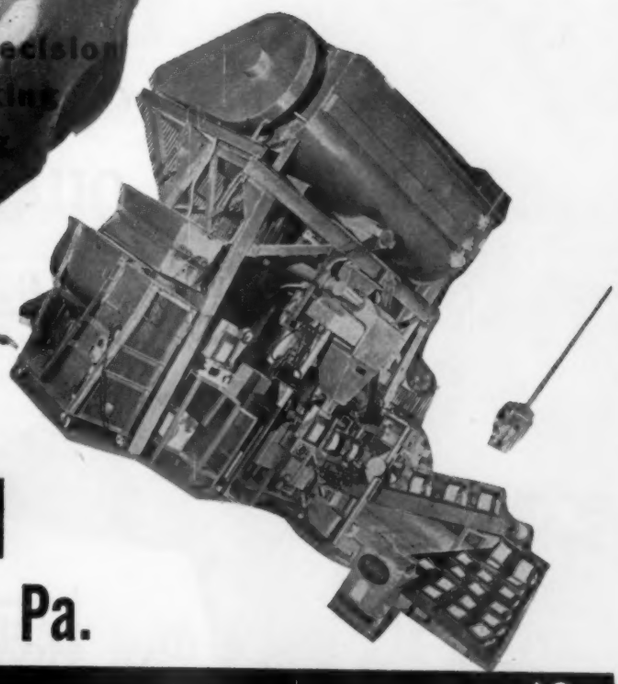

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Cottonseed Meals Being Evaluated for Use in Poultry and Swine Rations

NEW ORLEANS — An extensive study is currently being made to evaluate present commercial cottonseed meals for use in poultry and swine diets.

The work is being carried out by the Southern Regional Research Laboratory of the U.S. Department of Agriculture, in cooperation with the National Cottonseed Products Assn. and with the help of federal, state and commercial laboratories.

A. M. Altschul, head of the oilseed section of the Southern Regional Laboratory, told of the work at the fifth Cittonseed Processing Clinic at the laboratory. He spoke on the subject "Variations in Chemical Characteristics and Nutritive Value of Commercial Cottonseed Meals."

Along with the nutrition studies to avaluate cottonseed meals, work is being done on the development of better chemical methods of characterizing the nutritive value of cottonseed meals.

Progress Made

Mr. Altschul noted that a good deal of progress has been made in understanding the processing variables which affect meal quality, and many meals suitable for feeding to poultry and swine have been produced. In 1954, in fact, some 250,000 tons of cottonseed meal went into swine and poultry feeds.

With this background, it was decided to take stock of present processing methods and to compare the values of meals produced by the different processes. Plans were then made for the evaluation of typical meals in a standard nutritional test to be conducted by nutrition investigators in industry and in state and federal research work.

The principal work will be done with broilers, with the different cottonseed meals fed at levels to replace 100%, 50% and 25% (on a nitrogen basis) of the soybean meal in the diet. Tests also may be made with rats, swine and other animals.

The purpose of this work is to provide information regarding the suitability and performance of mixtures of commercial cottonseed meal with soybean meal in practical poultry and swine rations, and to provide additional information on the rela-

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For more life-saving facts phone the American Cancer Society office nearest you, or write to "Cancer"—in care of your local Post Office.

American Cancer Society

Maine Broilers Yield 901,995 Extra Pounds of Meat on a Properly Balanced Ration

• Dr. L. M. Dansky, Lipman's Research Director, shown feeding broilers, has complete facilities for testing feeds. Below is Lipman's modern poultry-processing plant.

Lipman Poultry Co., Augusta, shows with 4,919,697 birds how to profit at today's broiler prices . . .

Complete production records of this firm show the value of a properly balanced high-energy feed.

4,919,697 broilers were processed in the ultra-modern plant of the Lipman Poultry Company in 1955. Approximately 2.5 million delivered in the second half of the year weighed 901,995 pounds more than a similar number delivered during the first half. These birds were grown under the direct supervision of experienced poultrymen on feeds manufactured in Lipman's new push-button mill.

Dr. Dansky, stating the reason for this better performance, says: "We fed a high-energy ration during all of 1955, but the improved growing records during the second half of the year were made possible by balancing this energy with a more *effective* protein. The addition of DL-methionine was our first step in that direction."

Weight gains for the broilers grown the second half of the year were increased 4%, feed requirements were reduced 5%. These factors, coupled with better livability, resulted in a reduction of 8% for feed cost per pound of meat produced.

Make sure your broiler feeds are designed to take full advantage of their energy potential. For the lowest possible cost per pound of meat, be sure your feed contains enough methionine.

DU PONT Methionine

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tionship between processing conditions and protein quality.

Typical cottonseed meals have been selected for the nutrition studies. There will be three screw-press meals representing light, medium and extreme processing conditions. There will be three prepress solvent extraction meals representing levels of intensity of processing. There will also be a straight solvent-extracted meal, a hydraulic press meal and a chemically degossypolized meal.

The diets containing these meals are mixed in one operation through the help of the Ralston Purina Co., Mr. Altschul said, and the mixed feeds are going to nutrition investigators.

Dr. Harold L. Wilcke of the Purina company is chairman of the advisory committee which is supervising the work.

Mr. Altschul pointed out that complete chemical data are taken on all of the cottonseed meals so that there will be ample opportunity for correlation between chemical properties and nutritive value. A standard soybean meal will be used as a comparison in many of the experiments and in mixture with cottonseed meal in various proportions in all of the experiments.

Mr. Altschul said the results of the extensive investigation, which will take about a year to assemble, should have an important influence on the pattern of use of cottonseed meal in the future and may affect the future of various processing techniques.

Some 60 tons of feed containing mixed cottonseed and soybean meals are going to nutritionists in industry and state and federal agencies for evaluation on a large scale.

Chemical Methods

Mr. Altschul also discussed the present status of chemical methods for determining the nutritive value of cottonseed meal.

He said that nitrogen solubility in dilute alkali is now being used to measure the extent of heat damage suffered by meal during processing. This is a useful criterion, he said. In an attempt to timprove on it so that results of different processing conditions can be assessed, research is being done on the chemical properties of cottonseed meals. This work has a further value of determining what happens chemically to the meals produced by different processing methods.

One of the outcomes of the investigation has been finding that solubility in strong acid parallels the results of solubility in dilute alkali and in many instances gives a more accurate representation of processing history. Mr. Altschul said it is not proposed that solubility in acid should substitute for or supplant the present use of solubility in alkali. Both, he said, suffer from the fact that they are empirical measures.

By virtue of closer chemical examination of meals, researchers are coming closer to understanding what actually happens during processing. Mr. Altschul said they feel that they soon will be able to understand why meals differ in their nutritive value as a result of processing conditions and how one process differs from another in its effect on the meals.

This basic information, it is hoped, will make it possible to apply chemical information to planning of processing programs.

Hugh Learnan

JOINS COX FIRM—Hugh Learnan has joined the purchasing department of the Chas. M. Cox Co., manufacturer of Wirthmore Feeds, at the home office in Boston. Mr. Learnan has been purchasing agent for Kasco Mills at Waverly, N.Y., for the past several years. This plant is now integrated into the Wirthmore organization and all ingredient purchasing for it is being handled at Boston. Prior to his employment with Kasco Mills, Mr. Learnan was employed by the Cooperative G.L.F. Exchange in New York State. Mr. Learnan, his wife and two children plan to reside in suburban Boston.

MRS. H. T. MORRIS DIES

DECATUR, ILL.—Mrs. Herschel T. Morris, wife of the retired feed sales department manager of the A. E. Staley Mfg. Co., Decatur, died March 15 at the Decatur and Macon County Hospital here. She was 67 years old. Funeral services were at the Grace Methodist Church March 19, and burial was at the Graceland Cemetery. Surviving are her husband, five sons, 12 grandchildren and three great-grandchildren.

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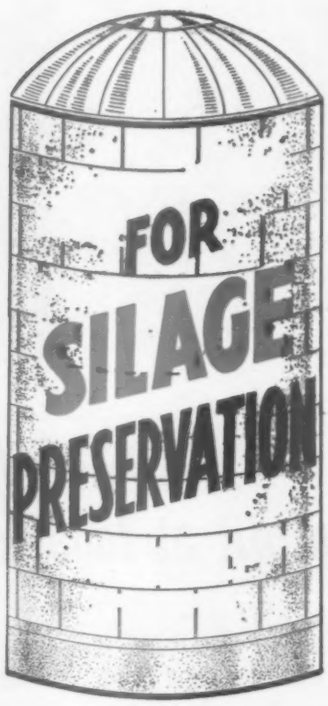

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SWEET—Increases palatability, adds valuable nutrients.

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MASTER MIX FEEDS

Research Indicates Lack of Protein Hurts Calf Crop

BELTSVILLE, MD. — Preliminary results of research by the U.S. Department of Agriculture indicate that the lack of protein in cows' rations cuts the quantity and quality of the calf crop.

Following is a USDA report on the work which appeared in a recent issue of Agricultural Research, a USDA publication:

The effect of a low-protein diet on cattle reproduction is being investigated at USDA's Agricultural Research Center, Beltsville.

Positive findings by ARS scientists should explain why small calf crops are frequently experienced by beef producers in various areas where natural feeds are low in protein.

Feeding tests conducted since 1951 under cattle nutritionist R. E. Davis have thus far provided no conclusive results but do inidcate that lack of protein may upset normal reproductive functions in cows.

All cows are kept continuously on the experimental rations and are rebred as soon as possible after calving. Experimental evidence to date indicates that cows receiving the low level of protein do not come into heat as soon after calving as do those on the higher protein level. And the interval between calvings is longer. There are also limited data showing that the duration of heat is shorter than normal. These possibilities are now being further investigated by periodic examination of the ovaries of all cows in the experiment. Either delayed or short estrus periods, especially in large beef herds, could easily be an important factor in receiving a below-normal crop of calves.

Second Effect

In results obtained so far, a second striking effect of the low-protein ration is a decrease in weight of calves at weaning time. Birth weights, the tests have shown, are not significantly different between calves from cows fed a very-low-protein diet and those fed a recommended minimum-protein diet. But the calves from the low-protein group have averaged 40 or more pounds lighter at 6 months of age (weaning) than those that were produced by the control group.

Cattle used in the experiments are Milking Shorthorns crossed with Herefords. The control group was fed approximately 0.9 pound of digestible protein per animal daily—the minimum recommended level. The low group gets two-thirds of this amount, or 0.6 pound per animal. Protein in both diets is adjusted by the quantity of alfalfa pellets used.

Except for the difference in protein, feed given both groups supplies the same total digestible nutrients and provides the recommended amount of energy. This feed is composed of corn-and-cob meal, salt, vitamin A and bone meal. In addition, cows in both groups are fed low-protein grass hay. (The hay and the grain are weighed for each cow daily.)

Feeding Plan

The feeding plan used requires that the cows consume their hay rations before they get their grain rations. And the quantity of hay each animal eats determines the amount of grain-protein feed she will receive. A cow consuming 15 pounds of hay, for example, gets 9 pounds of grain and supplement. The cows used in both groups are kept in confinement and do not have access to pasture.

The low-protein animals probably get more protein than some cattle get at certain seasons in some protein-deficient areas. These experimental cattle are maintained at constant levels of protein all year.

The importance of the protein-productivity study is best indicated by the fact that use of protein supplements in some low-protein areas has not increased calf crops to the desired level. The present work may show the kind and amount of protein needed, as well as the best time and method of supplementation, to increase the calf crop.

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JAY MARKHAM DIES

LYONS FALLS, N.Y.—Jay Markham, 84, who operated a feed business here for many years, died April 27. In 1893 he became a junior partner with Oscar E. Davis in the feed business and in 1928 bought out Mr. Davis' share of the business. He continued to operate the firm until 1944 when he sold it to Charles McDonald.

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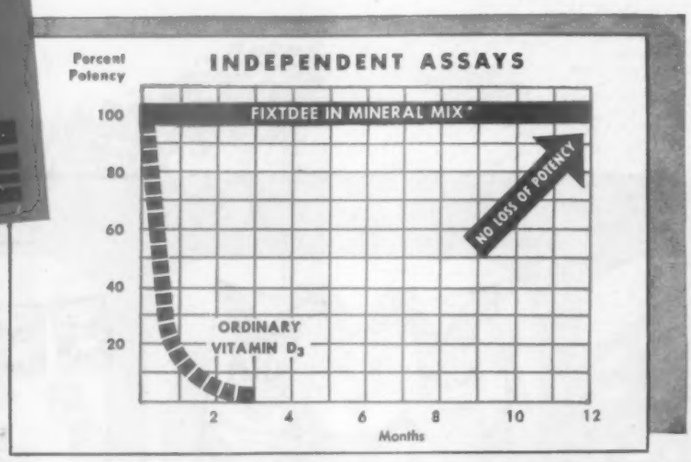

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MERCHANDISING HINTS FOR THE FEED RETAILER

Tips for Free Chick Days

Dealers who consider "free chick days" as an integral part of their merchandising program might find the suggestions made by a district feed sales manager worthwhile in making their events more profitable. Hugh S. Harris, according to the Service Guide, a publication of Southern States Cooperative, has some tips which he says are the findings of actual experience with "free chick days." Here are his suggestions:

● **Have additional chicks for sale. If you plan to give away 5,000 chicks then you should have another 2,000 or 3,000 more on hand to sell to farmers. Many farmers, as soon as you have given them the free chicks, want to buy more.**

● Have tickets written at the billing counter for the 25 lb. of starting and growing mash and any poultry equipment that the customer may want. At the same time, have another billing machine at the give-away counter. Many people often realize they need poultry equipment even though they had previously said "no" when they were asked.

● **Have 5% discount on all poultry equipment that day. This will help move more poultry equipment. Keep in mind that it is the feed and poultry equipment that is moved that day and afterwards that determines whether a "free chick day" is a success—not the free chicks.**

● Get counter chick boxes that hold 25 to 30 chicks. This is better than getting people to bring in their own and you can have the chickens in boxes before the crowd forms. You may be able to work out an arrangement with the hatchery to furnish the small counter chick boxes.

● **Put such pamphlets as "From Here to Maturity," or "More Lay, More Pay," in the counter boxes with the baby chicks. Also a starting and growing mash pamphlet and a chick guarantee pamphlet. In this way, you are sure the customer gets it out of the store and takes it home with him.**

● Display chart giving feed instructions. When people start asking questions about feeding starting and growing mash you can refer them to the chart. It saves time.

● **Have a feed consumption chart available where it can be easily read. This will also help answer questions.**

● Display the name of the hatchery that furnished the chicks you are giving away.

● **Have all chicks on hand at least 30 minutes before the store opens for the "free chick day." The biggest rush will be right after you open up.**

● Give careful thought to arrangement of counters, tables, etc., for the "free chick day." Efficiency is important because people really flow through the store on this day.

● **The most important tip is—be a salesman. Be alert, talk up to people, talk up your commodities. Don't just give away chickens and fail to ask for an order on poultry equipment, other feed, seeds and fertilizer. Your efforts can really pay off if you try.**

Successful Institute

A farmers' institute co-sponsored recently by the Bethel Feed & Produce Co., Anoka, Minn., and the Anoka County, Minn., extension service was attended by 200 farmers and their wives. The all-day event included a talk by an extension specialist on poultry who urged more efficient management and stressed automatic waterers as a valuable labor saver. The county's 4-H Club agent briefly summarized the work of 4-H clubs. An extension agronomist discussed modern corn raising methods and the county agent explained the proper procedure for taking soil samples to determine fertilizer need. Other speakers discussed family gardening, home freezing and crop drying. Wendell Ledin, owner of Bethel Feed, states that the institute was a worthwhile event for his firm to co-sponsor and that it produced many new friends and prospective customers.

Direct Mail Rated No. 1

Direct mail is "our choice of advertising," says one feed dealer. "From time to time, we test the drawing power of our mailing pieces to determine if direct mail is worthwhile. The tremendous response that we get from direct mail shows us that we are channeling our money into the right advertising media," he continues. Response as high as 75% of his mailing list of 500 farmers has been counted when the offer of a free gift was mentioned on a post card. The dealer firmly believes in free offers, such as a fly swatter, a clothes pin bag or a pencil to bring in traffic into the store. The offers are usually announced by direct mail. Three types of direct mail pieces are used: The mailer provided by one of his suppliers which is institutional advertising; the second which goes to all boxholders in the county, and third which is prepared in his own store, such as a mimeographed post card or letter to his selective list of 500 customers.

NEW FISH MEAL DEVELOPMENT

(Continued from page 16)

FIGURE 3—Effect of DPPD on the oxidation of air-cooled Menhaden scrap.

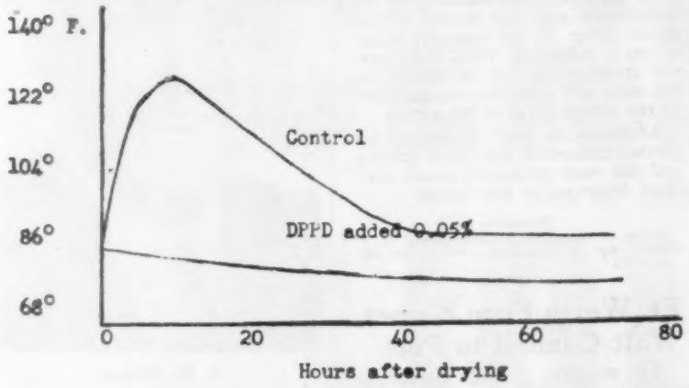
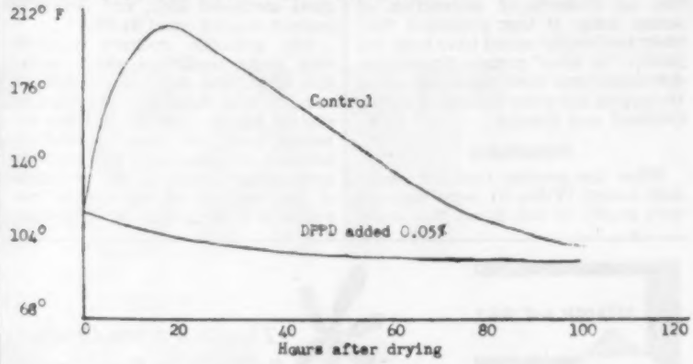


FIGURE 4—Effect of the addition of DPPD on the temperature rise association with the post-drying oxidation of Menhaden whole meal.



ing trials where so-called whole meals have been compared with an equivalent quantity of fish meal and solubles may have been caused by overheating during processing. That such products can be prepared without excessive heating, through the use of an antioxidant, is amply illustrated in Figure 4.

Nutrient Content

When analyzed chemically, there was very little difference in the content of the major nutrients of DPPD-treated and non-treated fish meals, with the exception of crude fat. Antioxidant-treated scrap and meals invariably contained from 1 to 2% more extractable oil regardless of whether ether or acetone extraction methods were employed. Since this was the only apparent difference, chick feeding trials were conducted to determine whether oxidation and heating during the "curing" process were injurious to protein quality. Day-old Arbor Acre Rock cockerels were fed a supplemented corn, soybean oil meal, peanut meal ration adjusted to provide a 20% protein level when 8% of the fish meal under test was added. This ration was formulated to place stress on the amino acid lysine, which is normally the most susceptible of the essential amino acids to heat damage.

The results presented in Table 2 suggest that fish meal produced by normal scrap pile curing is not as good a source of amino acids as that produced where heat dissipation is facilitated or when oxidation is controlled.

TABLE 2—Effect of DPPD on the quality of Menhaden fish meal.

Ration	No. of chicks	Av. wt., gm. 4 weeks	Feed/ gain
Basal* plus 8% scrap pile cured fish meal	40	306	1.89
Basal plus 8% experimental fish meal	40	325	1.88
Basal plus 8% experimental fish meal plus 0.05% DPPD ...	40	354	1.79

*Corn, SBOM, peanut meal type with 0.0125% DPPD added.

The results of the feeding trials indicated that scrap pile "curing" under the conditions of this study reduced the quality of fish meal. In order to determine whether protein quality was being affected, a study was made of the liberation of lysine, methionine and cystine by acid hydrolysis. The amino acids were then determined microbiologically using the test organism leuconostoc mesenteroides P-60. Samples were acid hydrolyzed with 6 N HCl for five hours following a preliminary ether extraction. Nitrogen determinations were carried out by the Kjeldahl method. The results of this study are presented in Table 3. The amino acid levels determined show little or no effect from different methods of processing. It is indicated that scrap pile "curing," when carried out under controlled conditions, does not result in the destruction of amino acids. The lysine values appear to be considerable

TABLE 3—The effects of methods of processing on the level of lysine, methionine and cystine in Menhaden fish meal.

Amino acid / Fish meal	Lysine	Methionine	Cystine
	Percentage amino acid of nitrogen x 6.25		
Scrap pile cured Menhaden meal ...	11.10	2.95	0.95
Experimental Menhaden meal ...	11.15	2.98	1.06
Experimental Menhaden meal plus 0.05% DPPD	11.91	3.02	1.06

treat chicks and poults for 4/100 of a cent per day!

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ably higher than most of the values reported in the literature. Since there was no evidence of destruction of amino acids, it was presumed that their availability might have been impaired. "In vitro" protein digestibility determinations were conducted using the pepsin digestion method of Gehrt, Caldwell and Elmslie.

Digestibility

When the samples used for amino acid assays (Table 3) were digested with pepsin, it was found that scrap pile cured meal contained 79.8% of digestible protein, the experimental meal contained 85%, and the antioxidant treated meal 91.3%.

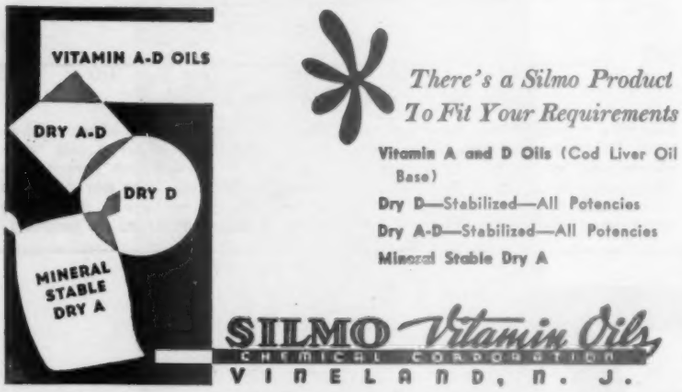
The available evidence suggests that under conditions where oxidation of polyene fish oils proceeds at a rapid rate there is a reduction in protein quality. The mechanisms involved have not been established; however, it is suggested that reactive compounds formed by the oxidation of the residual oil react with free amino or other groups to form complexes which are resistant to enzymic digestion.

The proper application of an antioxidant in the processing of fish meal will materially contribute to improving protein quality and will enable the production of a more uniform product. The addition of an antioxidant probably exerts a favorable effect on the nutritive value of the residual oil. Thus, with proper stabilization, the oil content of fish meal will contribute significantly to the energy level of the ration.

Antioxidants offer a means for further improving fish meal quality, and fish meal processors should consider their use in the future.

Reference

1. A. J. Gehrt, M. J. Caldwell and W. P. Elmslie—Agr. & Food Chem., Vol. 3, pp. 159-162, 1955.



Ft. Worth Firm Names Walt Connell to Post

FT. WORTH — Walt Connell of Arlington Heights, Ill., has been promoted to a newly-created sales post with Ft. Worth Steel & Machinery Co., manufacturer of specialized machinery for feed mills.

He is now assistant to the vice president in charge of sales, M. S. Jackson, Jr. Previously Mr. Connell was the firm's midwestern regional sales manager, with offices in Chicago. His headquarters now is the company's main offices in Ft. Worth.

Mr. Connell's new position, says Mr. Jackson, was established as part of the company's current program of sales expansion. The job has two major functions: (1) Research and negotiations in the selection and appointment of additional Ft. Worth product distributors across the nation. (2) Aid to distributors in training of their sales staffs and other merchanding assistance.

Before joining FWS&M last fall, Mr. Connell was regional sales manager in Chicago for the American Pulley Co. He had become a salesman for that firm in 1948.

Prior to that, he was with Chicago Latrobe Twist Drill Works as district manager in St. Louis, his native city. During World War II he owned and operated the University Tool & Plating Co., St. Louis, manufacturing war materials.

P. H. Philpot

APPOINTED—The feed division of the William Davies Co., Danville, Ill., has announced the appointment of P. H. Philpot as sales representative in Georgia. Mr. Philpot has been associated with General Mills, Inc., as a feed salesman for the past eight years. Previous to this time he was connected with the U.S. Department of Agriculture in field service work for the Production and Marketing Administration. A Georgia native, he was educated at West Georgia Junior College and the Atlanta Division of the University of Georgia. Mr. Philpot will be responsible for Swisher Feed Sales in the broiler raising areas of Georgia.

Turkey Meeting

MOUNT MORRIS, ILL.—The National Turkey Federation has announced that the annual mid-year meeting of the NTF executive committee will be held July 9-11 at Myrtle Beach, S.C. Representatives of state turkey associations are invited to attend and take part in the meeting.

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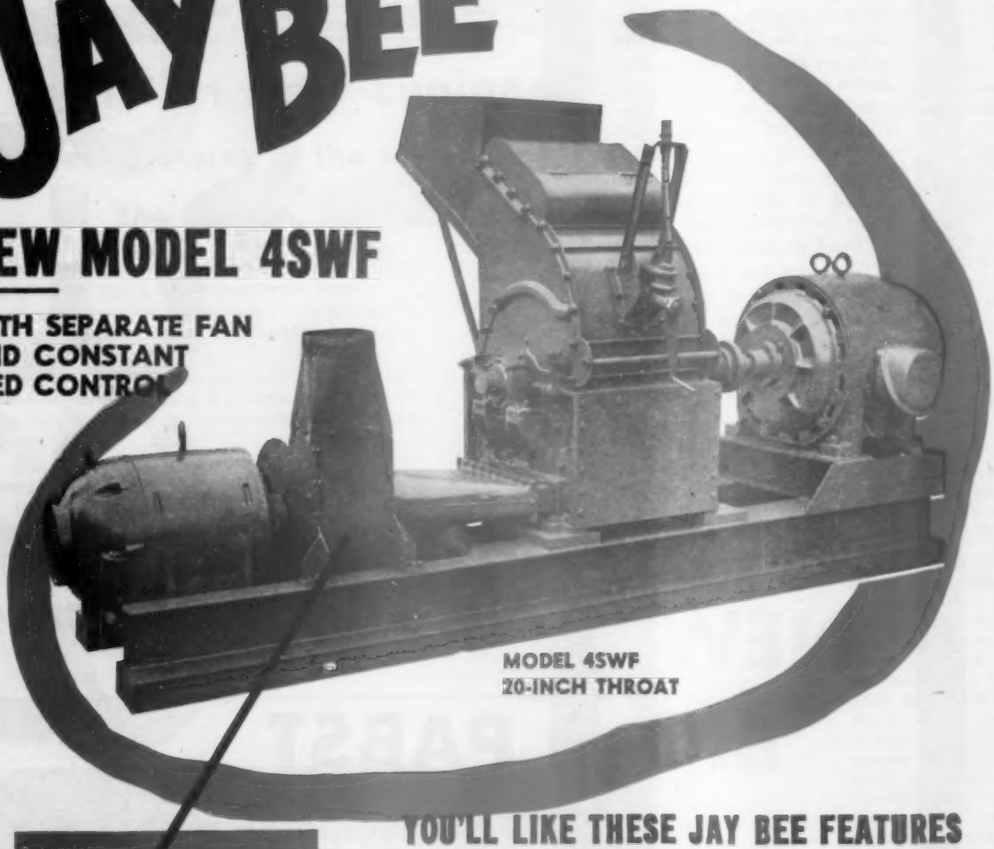

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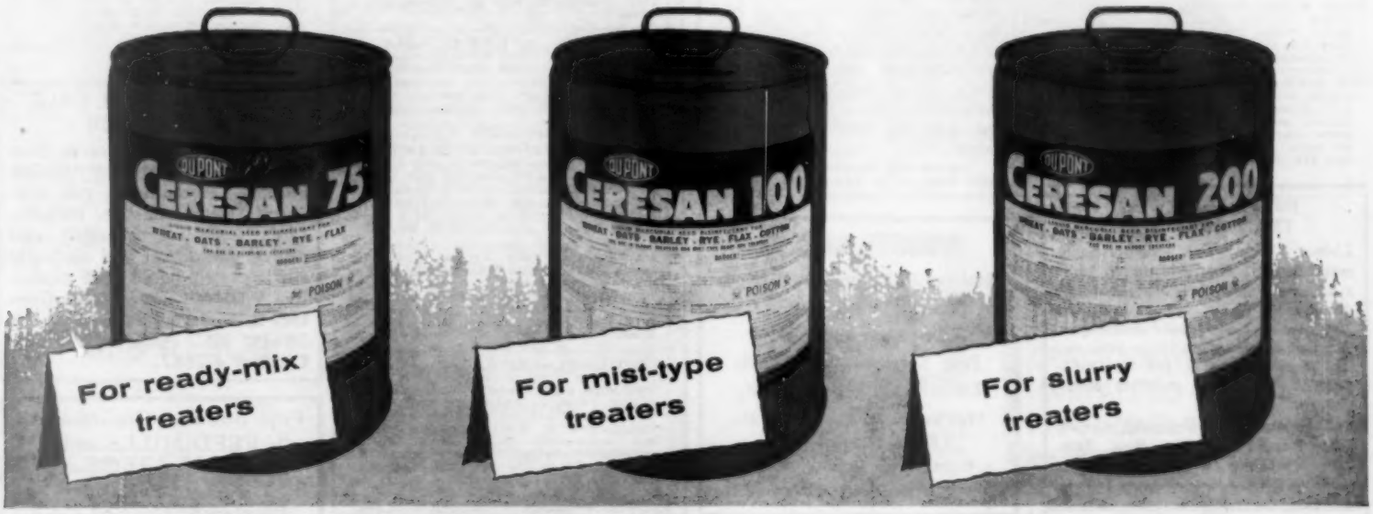

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You get superior performance and economy with any one of the new "Ceresan" liquids. They are convenient to use . . . help speed up treating. Being complete solutions, they won't settle out. And all 3 formulations put a stronger, more uniform red color on seed.

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Rates: 15¢ per word; minimum charge $2.25. Situations wanted, 10¢ a word; $1.50 minimum. Count six words of signature, whether for direct reply or keyed care this office. If advertisement is keyed, care of this office, 200 per insertion additional charged for forwarding replies.

Classified advertising rate not available for commercial advertising. Advertisements of new machinery, products and services accepted for insertion at minimum rate of $9 per column inch.
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WHIRLAWAY AIRBLAST CAR LOADERS. J. E. Hagan Mill Machinery, Jefferson City, Mo.

ONE USED S. HOWES CLEANER, combination corn and small grain. Size SS 443. Can be seen in operation. Fishbaugh Construction Co., Greenwich, Ohio.

WHEN YOU ARE IN THE MARKET FOR new or used mill machinery, electric motors or any other equipment, write J. E. Hagan Mill Machinery, Jefferson City, Mo.

WRITE US, WE HAVE WHAT YOU NEED in supplies for feed and flour mills. If it's new or used, buy it from Hughes, Wayland, Mich.

FEED MIXER, 1-TON CAPACITY, guaranteed first-class throughout, 5 H.P. motor drive. Ad No. 5774, Feedstuffs, Minneapolis 1, Minn.

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FOR SALE—ENCLOSED MOTORS, RICHardson Scales, truck scales, hammermills, eat crimpers, horizontal and upright feed mixers, sewing machines, elevator legs, screw conveyors, molasses mixers and pellet mills. J. E. Hagan Mill Machinery, Box 674, Jefferson City, Mo.

BULKMASTER FEED TRANSPORT UNIT

23-foot body, two compartments, mounted on tandem axle trailer, 10:00 x 20 tires, air brakes, completely hydraulic with 25 H.P. Wisconsin engine. Belt conveyor and auger dischargers. This unit has been used very little and is like new. Also, L 195 INTERNATIONAL TRACTOR, excellent condition.

Call Hanisch Feed Company, Central Park Road, Hicksville, New York. Phone: WEIls 1-2249.

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LIMITED QUANTITIES
USED PRE-NEMA MOTORS
30-DAY GUARANTEE
FIRST COME . . . FIRST SERVED

H.P.	R.P.M. 3,600	R.P.M. 1,800	R.P.M. 1,200
1		$ 22.00	$ 27.00
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5		39.00	
7½		44.00	55.00
10		55.00	67.00
15		67.00	89.00
20		89.00	109.00
25		109.00	138.00
30	$135.00	135.00	155.00
40	155.00	155.00	190.00
50	190.00	190.00	233.00
60	233.00	233.00	

Totally enclosed at less than new open motor prices. All standard NEMA frames; rebuilt; ball bearings; new motor guarantee; 220/440 Volt, 60-Cycle, 3-Phase.

H.P.	1,800 R.P.M.	1,200 R.P.M.
1	$ 53.00	$ 62.00
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3	82.00	97.00
5	97.00	126.00
7½	126.00	160.00
10	160.00	193.00
15	193.00	253.00
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NEW & REBUILT (Guaranteed)
USED (As is)
Many makes and models

3 New Bauer No. 216 Quick Change Screen Hammermills in stock—Also a complete line of Jay Bee and Bauer Parts in stock.

DUST COLLECTORS
BEAT THESE PRICES!

New 42"	$145.00
New 48"	173.00
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Many other bargains not listed—We might have what you need — wire, phone or write us—Phone 2-4710. Prices subject to change without notice. Motors listed subject to prior sale. All prices listed F.O.B. Lima, Ohio.

The LIMA ARMATURE WORKS, Inc.
142 East Pearl St. Lima, Ohio
"Over 30 Years of Continuous Service to the Feed and Milling Industry"

MACHINERY FOR SALE

ONE DAY MIXER, 250 LB. CAPACITY, 35 R.P.M. with 3 H.P. motor. Ideal for fox farms or premixing. First check for $200 gets it. Choice Foods, Inc., 301 N. 7th St., Minneapolis 3, Minn.

FOR SALE — SPROUT-WALDRON, TYPE 3036 Swing Head Blender, 60 H.P. Three Ribbon Mixers, 336 cu. ft. working capacity. Rotary dryers, 5'x35'; 4'x30'; 4'6"x 40'; 5'6"x50'. Also Hammer Mills, Pulverizers, etc. Perry, 1403 N. 6th St., Philadelphia 23, Pa.

5 No. 26 Gyro Sifters; 1 Anglo American Molasses Mixer with pump and motors; 1 9x18 Crumble roll with motor; Union Special Bag Closers; Vi Brox Bag Packer; Model H. Jaybee Hammer Mill with motor and drive; new No. 40 Webster Single Power Shovel; 9x18 and 9x24 Two-Pair High Roller Mills; S. Howes Corn Cutter with 10 H.P. motor; 2 18" Beal Aspirator with fan; Horizontal One-Ton Mixers; Wood and Metal Elevators; Hoppers; Spouting; Conveyors; Motors; Reducers; Feeders; Bag Trucks; Pulleys, etc.

General Mill Equipment Company
2021 Pennsylvania, Kansas City, Missouri

Electric Motors
Rewound—Repaired—Rented.
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Good workmanship.
Fast Service—Fair Prices.
Electric Service Company
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HELP WANTED

MANUFACTURER'S REPRESENTATIVE wanted—Salesman calling on feed trade to carry nationally advertised sideline. Good, established repeat item. Several exclusive territories open. For additional information, write us and describe territory you now cover. Reply Herb Tessereau, P. O. Box 8078, Minneapolis, Minn.

FEED PLANT MANAGER

Unusual opportunity for aggressive young mechanical or chemical engineer who has a rural background and some knowledge of grains. Feed plant experience is preferred but not required. This is a job which will offer an opportunity to advance rapidly and rate of advancement depends solely upon individual performance and ability. Midwest location. Send detailed resume of education, experience, and salary requirements to:

H. F. S.
Personnel Department
PILLSBURY MILLS, INC.
Minneapolis 2, Minn.

MECHANICAL ENGINEER

Due to expanded customer and dealer service there is an excellent opportunity for a qualified man in Engineering Department of our Feed Division. This opening requires a man with a degree in Mechanical Engineering plus a minimum of four to five years' experience in designing and building of small feed mix plants. Prefer man in 30's or early 40's and with the ability to work effectively with sales organization. Location to be in Clinton, Iowa. Send detailed resume of education, experience, and salary requirements to:

H. F. S.
Personnel Department
PILLSBURY MILLS, INC.
Minneapolis 2, Minn.

HELP WANTED

EXPERIENCED FEED PLANT OPERATOR to manage production and maintenance. Fifty tons daily capacity—Michigan location. Address reply to Ad No. 1756, Feedstuffs, Box 67, Minneapolis 1, Minn.

OLD ESTABLISHED NEW YORK STATE jobber seeks young aggressive feed ingredient and grain salesman, experienced. Salary and bonus. Ad No. 1737, Feedstuffs, Box 67, Minneapolis 1, Minn.

ASSISTANT ADVERTISING MANAGER — Young man with comprehensive background in feed advertising and sales promotion. New York City location. Ad No. 1722, Feedstuffs, 551 Fifth Ave., New York, N. Y.

EXPERIENCED DOG FOOD SALESMAN with a following among feed stores, to sell nationally distributed dry dog food. Complete line. Many territories open. Commission and expense allowance. Ad No. 1349, Feedstuffs, Box 67, Minneapolis 1, Minn.

EXCEPTIONAL OPPORTUNITY IN southeastern territory for experienced feed salesmen. Established territories with excellent compensation for qualified men. Our salesmen have been notified. Ad No. 1709, Feedstuffs, Box 67, Minneapolis 1, Minn.

SALES MANAGER—WE HAVE AN OPENING for a sincere, aggressive man to manage a field sales force selling high quality poultry and animal feeds in Iowa, Wisconsin and Illinois. Eastern Iowa location. Address reply to Ad No. 1675, Feedstuffs, Box 67, Minneapolis 1, Minn.

SALES REPRESENTATIVES FOR OUR established and widely known feed supplements selling to manufacturers and large consumers. Territories open in California and the Midwest. Address reply to Ad No. 1676, Feedstuffs, Box 67, Minneapolis 1, Minn.

OPPORTUNITY—SMALL, WELL ESTABlished firm, New York City area, seeks man with good business background. No selling required, knowledge feed industry preferred but not essential. Age limit unimportant. If of retirement age, salary and home-office daily travel expense agreement arranged. Write complete. Ad No. 1686, Feedstuffs, 551 Fifth Ave., New York 17, N. Y.

ASSISTANT SALES MANAGER — LIVEwire only, wanted by fast growing manufacturer of nationally advertised antibiotic and vitamin feed and water additive specialties for poultry and livestock. Must have previous experience as assistant sales manager in feed or allied industries. Write giving full details of sales experience. Confidential. Ad No. 1696, Feedstuffs, Box 67, Minneapolis 1, Minn.

SALESMEN - DISTRIBUTORS — EXCLUsive territories now open—handle profitable-fast moving meat base rat and mouse poison. Good inventory turnover. Guaranteed to work. Send territory now covered, background, to Muncie Laboratories, Inc., 543 Johnson Bldg., Muncie, Ind.

SALES WANTED

Unlimited opportunities in Iowa, Illinois and Indiana with fast growing, nationally advertised company for experienced poultry and livestock feed salesmen with good production record. Salary, bonus and all expenses, car furnished. Ad No. 1735, Feedstuffs, P.O. Box 67, Minneapolis 1, Minnesota.

HELP WANTED

MAN 21 TO 35 TO START NEW BUSIness, vicinity Decatur, Ill., handle seed, feed, fertilizer, etc. Guaranteed $250 monthly plus 33⅓% net profit. Sphar & Co., Box 242, Mt. Carmel, Ill.

BUSINESS OPPORTUNITIES

FOR SALE OR RENT—FEED MANUFACturing plant, complete with pellet mill mixers. Located in Sioux City. Write Box 1251, Sioux City, Iowa.

EXPERIENCED MILL SUPERINTENDENT with some capital, interested in working partnership in feed mill—location immaterial. Ad No. 1721, Feedstuffs, Box 67, Minneapolis 1, Minn.

LARGE FEED AND FARM SUPPLY store, well equipped, private siding, truck and car level loading; owner wishes to retire; good opportunity to handle grain, easy to finance to reliable party. Ad No. 1753, Feedstuffs, Box 67, Minneapolis 1, Minn.

FOR SALE — IN CENTRAL MICHIGAN'S best farming area—two feed mills and farm supply, about 20 miles apart. Distributor for major brand feed. On RR siding. Room for expansion. Sales increasing—unlimited possibilities. Trained outside salesman. Ad No. 1720, Feedstuffs, Box 67, Minneapolis 1, Minn.

MANUFACTURERS' OR FEED REPREsentative now calling on feed dealers, feed and/or fertilizer manufacturers: If you need a good line of portable and stationary conveyors to complete your line and increase sales and profits, write in detail lines handled, area covered, experience, etc. Kay Enterprises, Janesville, Iowa.

OFFERING FOR SALE AT $325,000

Two terminal elevators in Twin City area aggregating 450,000 bushels bulk capacity plus tenanted flat warehouse. Includes grain handling, cleaning and drying equipment and currently storing grain to 90% of capacity. Will sell separately. Contact R. S. Jerue, 54 East Fourth Street, St. Paul, Minnesota. CApital 4-7587.

Fine Business Opportunities
FEED MILLS and
ELEVATORS
We Can Help You When You Want to Buy or Sell Your Business
Phone or Write
MID-WEST BUSINESS EXCHANGE
Halbert C. Smith Plymouth, Ind.

MACHINERY WANTED

WANTED — 400 FEET 18" SCREW AND Steel Conveyor Box with fittings. Gurley Milling Co., Selma, N. C.

WANTED TO BUY LATE MODEL 75 TO 125 H.P. California Century, with or without electric. P. O. Box 1107, Council Bluffs, Iowa.

WANTED TO BUY LATE MODEL USED 75 to 100 H.P. California Century Pellet Mill. Ad No. 1667, Feedstuffs, Box 67, Minneapolis 1, Minn.

COMPLETE FLOUR AND FEED PLANTS wanted, any size for export, will purchase your equipment for cash and remove. Also single pieces, pellet mills, roller mills, mixers, scales, etc. No dealers. Direct sales. Customers waiting. Give full descriptions. Address Ad No. 1463, Feedstuffs, Box 67, Minneapolis 1, Minn.

You Cannot Afford to Miss This

Well established going feed plant located on 3 acres of land in broiler and cattle feeding area of Southwest Mississippi. Two 80-ton storage bins, 30 x 70 storage building, 50 x 70 mill building, truck scales and complete milling equipment. PRICED TO SELL. Owner desires change. Complete information on request. Direct inquiries to

H. Z. Smith

P. O. Box 30, Franklin, Tennessee

MACHINERY WANTED

INTERESTED IN BUYING MOLASSES mixer, continuous process or 1½-ton Marion with molasses equipment. P. O. Box 1, Stock Yards Station, Sioux City, Iowa.

WANTED TO BUY — RICHARDSON scales, bag closing machines and other good mill, feed and elevator equipment. J. E. Hagan Mill Machinery, Jefferson City, Mo.

WANTED TO BUY—RAILROAD TRACK scale or a large capacity truck scale; also No. 46 Perfection Sock type dust collector or similar type collector in good condition. Advise condition and best possible price on each of above. Ranch Sweet Feed Co., P. O. Box 350, Fremont, Neb.

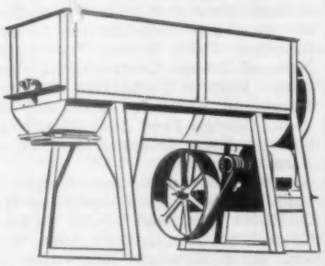
SITUATIONS WANTED

GENERAL SALES MANAGER WITH RECORD of success, seeks new connection. Available on 30-day notice. Min. salary base, $15,000. Write Ad No. 1695, Feedstuffs, 141 W. Jackson Blvd., Chicago 4, Ill.

M.S. DEGREE NUTRITION, DESIRES POSITION in quality control of feeds, or livestock specialist with some reputable company. Technical and practical experience in dairy field. Available June. Ad No. 1746, Feedstuffs, Box 67, Minneapolis 1, Minn.

CAPABLE EXECUTIVE, BORN AND EDUCATED at Edinburgh, Scotland, desires responsible managerial position. Unusual broad experience through family connections covers all departments, buying, selling, office, credits, mixing, elevator; also have good technical knowledge of the flow and practical aspects of flour and feed milling. Milling experience covers Scotland, Canada and United States. Good physical condition. Can analyze your business possibilities for full production. Have broad financial experience. Applicant is in the older age bracket, good congenial disposition. Not interested in company insurance or retirement benefits. Suggest personal interview sometime July or August. Available 15 days' notice to present employers not engaged in milling. Detailed information to inquirers, confidential, no obligation. Ad No. 1755, Feedstuffs, Box 67, Minneapolis 1, Minn.

BATCH MIXER
Headquarters
NEW and REBUILT



H. C. DAVIS SONS' CO.
Dept. FH-185, Bonner Springs, Kan.

Quality Minded Dealers
DISPLAY THIS SIGN OF SATISFACTION!

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Field-Test
KNOTLESS
BALER TWINE
A Proven Quality You Can Trust

For Distribution—Contact
ATLAS CORDAGE CO.
CHICAGO 11, ILL.
Importers Since 1928

BABY CHICKS FOR SALE

BABY CHICKS—AS HATCHED OR SEXED —Five popular breeds and one hybrid. Quality - Quantity - Service. Wholesale prices. Milford Hatchery, Liberty Road, Randallstown, Md.

Buffalo Union Outlines Goals

BUFFALO—Negotiations covering 1,800 employees of 20 Buffalo area feed mills and bag companies with Local 110, American Federation of Grain Millers, will begin about June 1. Among the requests submitted by the union are a "substantial" wage increase, vacation and holiday improvements, and night differential boosts.

Peter J. Rybka, union business agent, said the union, in addition to an unspecified general wage increase, seeks: A 10¢ hourly increase in night differential; provision for sick benefit pay amounting to 40 hours of the employee's straight-time rate of pay; pension plan changes to increase monthly benefits and establish paid-up life insurance of $1,500 for retired employees; 10 holidays a year; four-weeks vacation after 20 years of service, where not already provided.

Other requests include severance pay, jury-duty compensation so an employee will not receive less than 40 hours income, and three days off with pay for death in the immediate family. Some plants now provide the latter two benefits.

COUNTY TO BUILD MILL

COLBY, WIS.—A new feed mill has been authorized for the Clark County Farm at Owen. The county board appropriated $30,000 for the project which is to include storage capacity for 10,000 bu. in eight bins. Automatic handling equipment will be employed.

Fleischmann's F·I·B·Y
IRRADIATED DRY YEAST

Standard steel elevators, belt and bucket type, available from stock. Ten Heavy Duty sizes, from 300 to 10,000 Bu/Hr., for continuous service and four Light Duty sizes, from 110 to 750 Bu/Hr., for intermittent service. We also manufacture screw conveyors and hoppers. Send your requirements for complete information.
GODSHALK
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DOUBLE DUTY
SEE OUR AD ON PAGE 70
HAMMERMILLS

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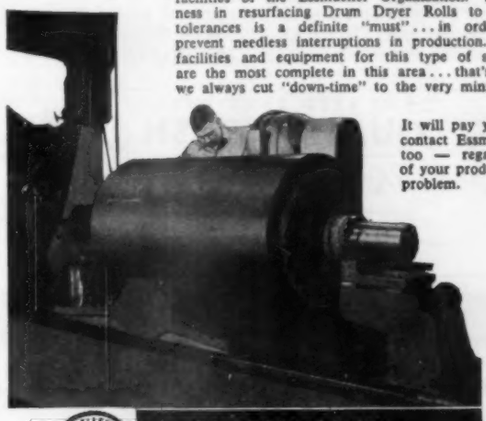
ESSMUELLER!

Resurfacing 32x52 inch Drum Dryer Rolls calls for Exacting "Know-How"

— That's why the Wm. G. Krummrich plant of Monsanto Chemical Co. employed the extensive facilities of the Essmueller Organization. Exactness in resurfacing Drum Dryer Rolls to close tolerances is a definite "must"... in order to prevent needless interruptions in production. Our facilities and equipment for this type of service are the most complete in this area... that's why we always cut "down-time" to the very minimum.



It will pay you to contact Essmueller too — regardless of your production problem.

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Engineers • Manufacturers
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Good reason to feel relaxed: it's the best equipment buy in the feed plant. You can buy a "California" with complete confidence. There's a CPM Pellet Mill of just the right capacity to meet your requirements. Write for full information.

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CUT FEEDING COSTS BY ADDING
RUMEX
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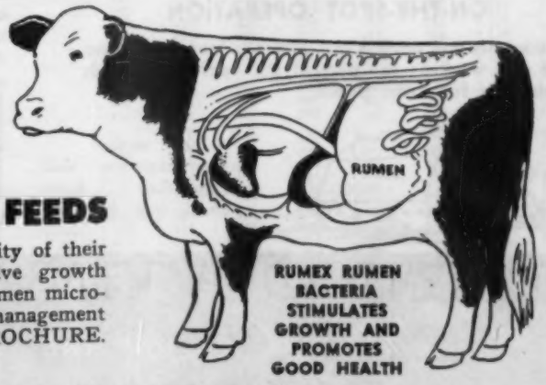
DAIRY & BEEF CATTLE FEEDS

No Cattle can gain faster than the activity of their rumen bacteria. RUMEX provides active growth stimulating, live colonies of the entire rumen microflora. RUMEX is the answer to many management problems. Send for the new RUMEX BROCHURE. It reveals many facts you should know.



VITAMINS, INC. 809 W. 50th Street, Chicago 21, Illinois
Basic Material Manufacturers and Headquarters for Technical Information.

AFMA Committee Notes Progress In Changing Trading to Cwt. Basis

CHICAGO—Progress in effecting a change in grain trading from a bushel to a hundredweight basis was noted this week in a report from the Committee of Purchasing Agents of the American Feed Manufacturers Assn.

The committee told of its campaign to help bring about the change in connection with a report on its activities during the past year. The report was issued prior to a committee meeting to be held May 23 in Chicago prior to the AFMA convention.

Many organizations have gone on record favoring the change in the trading basis or recommending that a government study be made of the proposal. The AFMA said it has been advised that the government is laying the ground work for early activation of the recommended study.

The purchasing agents' report also told of progress in bringing about more uniformity in feed trade rules, in inter-industry liaison and in improving ingredient quality and specifications.

Almost 300 feed industry men comprise the AFMA purchasing agents group. The association's program in this direction is directed by a 15-man committee.

The annual meeting of the purchasing agents' group will be held May 23. In preparation for that meeting, officers sent a digest of the past year's activities to all committee and AFMA members.

Unifying Feed Trade Rules — The report noted that considerable progress has been made in effecting more uniformity in trade rules. Meetings have been held with various groups, and recommendations to the Grain & Feed Dealers National Assn. resulted in two major changes in rules set by that group. Currently the committee is working with 10 trade associations on obtaining a better understanding of mutual problems affecting specifications and trading procedure.

The report also said that relations with G&FDNA have resulted in expansion of that group's trade rules committee, and it appears that the newly constituted committee will spearhead an accelerated program to eliminate confusing and conflicting rules.

Inter-Industry Liaison — The most recent interest of the AFMA Committee of Purchasing Agents has resulted in establishment of a medium for improved inter-industry liaison. During the current year, approved establishment of an advisory feed trade committee which will serve in an advisory capacity to the Committee of Purchasing Agents and to the AFMA on matters of mutual interest. Comprising the committee are members of the G&FDNA trade rules committee plus officers of the AFMA Committee of Purchasing Agents and the subcommittee concerned with liaison between the AFMA purchasing agents' and G&FDNA trade rules groups.

The purchasing agents plan to meet twice annually with the advisory feed trade committee, the first meeting to be held May 23.

Bushel-vs.-Hundredweight Campaign—Of all AFMA programs, perhaps none has created more widespread interest than the one dealing with the proposal to change trading to a hundredweight basis, the committee report said. Since approval at last year's AFMA convention, the campaign has gained steady momentum.

The committee has carried out educational work, working with industry, government and farm organizations. There has been some feeling that federal research should be conducted to determine the ease with which a change could be made.

Many organizations have favored an immediate change in the method of trading—including the AFMA, American Farm Bureau Federation, National Grange, Central Retail Feed Assn., Eastern Federation of Feed Merchants, Kentucky Grain & Feed Assn., Georgia Feed Assn., New England Feedmen, American Seed Trade Assn. and others.

Other groups have recommended a study of the subject—including the G&FDNA, National Grain Trade Council, Soybean Growers Assn., feed and grain advisory committees to USDA, National Soybean Processors Assn., Midwest Feed Manufacturers Assn., New Mexico Grain & Feed Dealers Assn. and others.

The AFMA has worked with several USDA sections regarding research on the subject, and it is advised that the government is planning early activation of the study.

Specifications and Quality Improvements—The purchasing agents' group also reported progress by sub-committees working with various industries on improving ingredient quality. This work will be reported at the meeting in Chicago.

The purchasing guides developed by AFMA, National Renderers Assn. and American Meat Institute for meat meal and meat and bone meal are an example of what can be accomplished, the committee pointed out.

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with the new B&L Complete PORTABLE FORMULA FEED BLENDER

A COMPLETE FEED PLANT ON WHEELS!

INCREASE YOUR SALES VOLUME!

HERE'S AN ADDED SALESMAN THAT PRODUCES SALES . . . AND "FARM FRESH" FORMULA FEEDS!

B & L users are reporting increases in sales volume as high as 50% from this new service . . . and getting new customers too! This is important to you in view of existing conditions today. B & L users report, too, that they are producing the same quality formula finished feeds as large stationary plants. Feed is uniformly mixed with no trace streaks or lumps . . . every time! Feeders report more economical gains and appreciate the time and effort saved by using their own grain and roughage and mixing right on-the-farm. B & L is truly the most complete machine on the market today.

ON-THE-SPOT OPERATION

All controls and gauges are centrally located to save time and work on the part of the operator. Speeds production for extra profit.

Check this combination of EXCLUSIVE features!

- ★ New Hydraulic Drives.
- ★ Carries both concentrates and molasses.
- ★ Completely controlled.
- ★ Pre-mixer affords triple mixing action.
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- ★ Higher speed mixing from low to high range.
- ★ More mobile . . . lighter weight (under 12,000 lbs. complete).
- ★ Simpler operation—operates from one spot.
- ★ No trace streaks . . . no lumps.
- ★ Produces top quality feed.
- ★ Not just a batch mixer . . . continuous grinds and blends.
- ★ Needs no auxiliary power.
- ★ Screw conveyor moves material from mill. (Fines and coarse never separate as they would if air were used.) Also saves horsepower and eliminates abrasive action.

A new service your customers will appreciate . . . better check into it, now!

Send TODAY!

Gentlemen: Dept. F-565

Please send literature on the B & L Portable Feed Blender to:

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Alfalfa Improves Winter Range Feed

FORT COLLINS, COLO. — Increased beef gains at lower cost result from adding alfalfa to winter range feed, according to researchers at Colorado A&M College. They say good results can be expected if alfalfa, in dehydrated form or as hay, makes up about 35% of the supplement.

The researchers said it was also found that the alfalfa supplementation resulted in a carryover of nutritional benefits from cow to calf. More calves of alfalfa-fed cows survived and they had weaning weights as much as 15 to 20 lb. more than calves from cows that received no alfalfa.

ANTIBIOTICS

(Continued from page 1)

for antibiotics, of course cover up a considerable variation among types of feed, Dr. Brensike points out. For example, he says, low levels of antibiotics were included in chicken and turkey starters, grower and broiler feeds by plants producing about 90% of the volume of each type of feed. Plants producing nearly 50% of the total layer and breeder feeds included antibiotics in such feeds. Low levels of antibiotics also were being used by plants producing almost three fourths of the total pig and hog feeds, but only 5% of the dairy and beef feeds.

Similarly, Dr. Brensike said, about 50% of the total poultry, hog, dairy and beef cattle feeds produced during the same fiscal year contained vitamin B_{12}. However, he noted, this average again covers up a considerable variation by types of feed, as might be expected.

For 1954, the government reported sales of some 255 million grams of antibiotics for use in animal feeds. Of this total, some 60% appears to have been for use in low level antibiotic feed for poultry, hogs and dairy and beef animals for growth promotion. The remaining 40% apparently was for therapeutic or high level antibiotic feeds and for other types of feeds.

Objectives

The objectives of the study were to analyze the use of certain drugs and vitamins at growth promoting levels. The researchers sought answers to such questions as how rapidly did feed mills include these items in their feed; how does the potential antibiotic and B_{12} market compare among types of feed; in what form do feed plants buy and use the drugs and vitamins; what types of antibiotics are used in different types of feed; what levels are used?

Some detailed answers to such questions are provided in the complete report.

Disregarding volume of feeds containing antibiotics, at the time of the survey in late 1954 and early 1955, about 93% of the plants producing poultry feed used antibiotics, 60% used them in hog feed, 22% in dairy feeds (for the most part calf feeds as might be expected) and 4% in beef cattle feeds. Since the time of the survey, it is noted, use of antibiotics in beef cattle feeds has increased.

For purposes of the survey, plants were grouped according to production—above and below 15,000 tons annually. A larger proportion of the large plants used antibiotics in each type of feed. However, it was stated that these plants did not necessarily use them in all swine or all poultry feeds, for example.

The data indicate that some smaller plants may not be using antibiotics, for example, where their use is generally recommended. For example, pfactically all of the larger plants making swine feeds added antibiotics to such feeds, while the percentages of smaller plants using antibiotics in swine feeds varied from 28 to 72% in the different regions.

Levels Reported

Data also were given on levels of antibiotics and B_{12} added to feeds. It appeared that most plants used such materials at or near generally recommended levels, although extensive ranges were indicated. Variations were to be expected, of course, particularly for B_{12}, depending on other ingredients in the feed.

The average levels of antibiotic content in terms of grams of penicillin were about 3.5 grams in broiler feed, 3.2 grams in starter feed, and about 2.7 grams per ton in grower, and layer and breeder feeds. Pig feeds contained an average of about 16.5 grams of antibiotics on a broad spectrum (Aureomycin and Terramycin) antibiotic basis per ton and hog feeds about 12.5 grams per ton. An average of about 27 grams was included in calf feeds.

The report indicates that penicillin was used by most plants and in most feeds for poultry, while broad spectrum antibiotics were used by most plants and in most feeds for swine and calf feeds. Data also were reported for other antibiotics, mostly bacitracin.

Most large volume plants purchased the additives covered in the survey on a carrier or in a partial premix. Most small plants purchased them in a complete or nearly complete mixing supplement.

Some information is given on when mills started using arsonic compounds as well as antibiotics and B_{12}.

Soybean Meal Futures Advance Sharply

MEMPHIS — Sharp gains were scored by nearby soybean oil meal futures on the Memphis Board of Trade after an erratic and nervous period. Volume was on the decline.

The market was dominated by the unstable behavior of the soybean market, with the best prices of the week being posted on May 12.

A feature of the week was the manner in which the nearby May option went to a premium over the deferred old crop months, marking the first time it has been at a premium in many weeks.

Closing prices May 16 of unrestricted soybean oil meal were 60¢@ $2.45 ton higher, with August posting the highest gain. ETL closings were 75¢ to $3 ton higher.

HATCHERY REPORT

(Continued from page 1)

929,566,000—for an increase of 15% over a year earlier.

Broiler Chicks: Broiler chicks produced in April—which accounted for 45% of the chicks hatched during the month—totaled 132,546,000—21% more than in April last year and the largest of record for the month. Thus, the expanded broiler production trend continued. For the first four months of the year the broiler chick hatch was a substantial 25% ahead of the same period in 1955.

USDA also pointed out that demand for broiler chicks was remaining steady, and a relatively large hatch of broiler chicks was in prospect for May as the number of eggs in incubators on May 1 was 21% more than a year earlier.

By regions, numbers of broiler eggs in incubators on May 1 all were up from a year earlier. The plus-changes were: New England, 16%; middle Atlantic, 30%; east north central, 7%; west north central, 44%; south Atlantic, 18%; east south central, 42%; west south central, 23%; mountain, 53%; Pacific, 7%.

(For state data on broiler chicks, see placement table covering principal states on this page.)

Flock Replacement Chicks: Chicks produced for flock replacements during April totaled 165,262,000—up only 1% from a year earlier. This slight increase follows a slight gain over a year earlier in the previous month also.

Earlier this year, with a large early hatch, production of chicks for flock replacement was substantially ahead of a year earlier, and it appeared that the number of chicks raised this year for flock replacement would exceed farmers' previously expressed intentions and would be significantly higher than in 1955.

Subsequently, demand for baby chicks dropped off and chick output has not been so large recently in comparison with a year earlier.

For the January-April period, the hatchery report shows non-broiler chick output up 7% from the same period a year earlier. However, another recent USDA report indicated that the number of chicks and young chickens of this year's hatching on farms May 1 was up only 2% from a year earlier. (Feedstuffs, May 12)

With April the biggest chick hatching month and with the bulk of the year's total flock replacement hatch completed, it appears on the basis of the hatchery report that the flock replacement chick hatch will be at least somewhat larger than last year. The exact extent of the increase remains to be seen.

However, the report does note that the hatch of non-broiler chicks in May is not expected to show much change from the May hatch a year ago as the number of non-broiler eggs in incubators on May 1 was about 4% more than a year earlier.

In addition to viewing the over-all figures, it is also necessary, of course, to look at area data, for some regions and states differ somewhat from the over-all picture in changes and extent of changes. This may be seen in the accompanying table and in the regional figures on percentage changes from a year ago in the numbers of non-broiler eggs in incubators on May 1.

The regional percentage changes for eggs in incubators were: New England, up 18%; middle Atlantic, up 26%; east north central, up 3%; west north central, up 1%; south Atlantic, down 7%; east south central, down 7%; west south central, up 13%; mountain, down 11%; Pacific, up 7%.

Turkey Poults: Continuing previous trends, heavy breed poult production during April was 23% larger than in April last year, while light breed population was 13% smaller.

The number of heavy breed poults hatched during April was 15,748,000. For the first four months of the year, heavy breed output was up 36% from a year earlier. April, of course, is one of the biggest months for heavy breed poult hatchings.

For May, another big month, another increase is seen, though not so large percentage-wise. The number of heavy breed eggs in incubators on May 1 was 26,598,000—up 15% from a year earlier.

The heavy white breed hatch during April totaled 2,887,000 poults. Of the heavy breed eggs in incubators on May 1, 5,789,000 were of the heavy white breeds. No comparisons are available with a year ago for heavy white breed poults and eggs.

Light breed poults hatched during April totaled 1,521,000 — down 13% from a year earlier. The number of light breed eggs in incubators on May 1 totaled 2,960,000, compared with 3,504,000 on May 1 last year. Production of light breed poults during the first four months of this year was down 21% from a year earlier.

Non-broiler Chicks Hatched by Commercial Hatcheries

(000's omitted)

State and division	During April 1955	During April 1956*	Jan. thru April 1955	Jan. thru April 1956*
Maine	683	467	2,241	1,893
N. H.	1,320	1,184	4,451	4,475
Vermont	126	135	403	464
Mass.	2,624	2,500	8,899	9,504
R. I.	121	100	383	336
Conn.	2,072	2,147	8,113	9,357
N. E.	6,946	6,533	24,490	26,029
N. Y.	3,301	2,850	11,943	10,710
N. J.	5,144	5,131	19,913	20,487
Pa.	7,508	7,705	25,033	26,617
M. A.	15,953	15,686	56,889	57,814
Ohio	7,960	7,800	20,170	21,208
Ind.	11,731	11,977	30,913	31,917
Ill.	13,041	11,614	30,536	30,928
Mich.	4,190	4,000	11,880	11,765
Wis.	3,956	3,808	8,430	8,639
E. N. C.	40,878	39,199	101,929	104,457
Minn.	16,370	16,980	32,025	36,830
Iowa	21,150	22,700	40,400	46,130
Mo.	11,108	11,274	21,889	22,999
N. Dak.	1,600	1,690	2,524	2,652
S. Dak.	4,950	5,095	8,380	9,807
Neb.	7,972	7,818	16,879	17,685
Kansas	5,877	6,694	12,867	15,134
W. N. C.	69,027	72,251	134,964	151,237
Del.	55	33	126	88
Md.	407	408	989	925
Va.	1,686	1,567	4,209	4,080
W. Va.	414	402	749	823
N. C.	1,898	1,832	5,889	6,633
S. C.	550	436	1,814	1,784
Georgia	1,815	1,659	5,725	6,707
Florida	1,337	1,567	4,557	5,696
S. A.	8,162	7,904	24,058	26,736
Ky.	1,900	1,700	4,290	4,087
Tenn.	1,350	1,425	3,850	4,448
Alabama	704	755	2,574	3,161
Miss.	501	491	1,394	1,589
E. S. C.	4,455	4,371	12,108	13,285
Ark.	551	583	1,196	1,562
La.	506	439	1,622	1,751
Okla.	2,320	2,650	6,290	6,620
Texas	4,520	5,314	15,289	18,850
W. S. C.	7,897	8,986	24,393	28,783
Mont.	572	565	1,344	1,315
Idaho	724	550	2,038	1,431
Wyo.	52	53	134	122
Colo.	1,068	1,050	2,788	2,985
N. Mex.	85	75	192	160
Ariz.	103	119	354	469
Utah	505	373	1,523	1,275
Mount.	3,109	2,785	8,373	7,757
Wash.	1,260	1,349	4,996	5,251
Oregon	936	962	3,732	3,633
Calif.	5,230	5,236	20,900	20,831
Pacific	7,426	7,547	29,628	29,715
U. S.	163,853	165,262	416,832	445,813

*Preliminary.

Poults Hatched and Eggs in Incubators

(000's omitted)

Selected states	Poults hatched during April—Heavy breeds 1955	Poults hatched during April—Heavy breeds 1956*	Poults hatched during April—Light breeds 1955	Poults hatched during April—Light breeds 1956*	Eggs in incubators May 1—Heavy breeds 1955	Eggs in incubators May 1—Heavy breeds 1956*	Eggs in incubators May 1—Light breeds 1955	Eggs in incubators May 1—Light breeds 1956*
Michigan	571	670	34	2	1,202	1,138	57	2
Wisconsin	347	321	50	25	513	539	20	49
Minnesota	1,640	2,173	232	132	2,612	3,306	408	270
Iowa	1,076	1,303	9	11	2,004	1,850	46	25
Virginia	357	544	570	639	1,138	1,520	1,215	1,346
North Carolina	182	212	6	0	301	314	10	0
South Carolina	208	276	6	0	263	401	24	0
Texas	845	1,079	58	51	1,161	1,642	111	101
Washington	283	207	21	45	393	442	56	73
California	2,718	2,976	106	109	4,100	4,785	138	122
Other states†	4,598	5,987	658	507	9,528	10,661	1,429	972
United States	12,825	15,748	1,750	1,521	23,215	26,598	3,504	2,960

*Preliminary. †Combined to avoid disclosing individual operations.

Chicks Placed in Principal Broiler Areas

(000's omitted)

Week ending	Maine	Conn.	Penn.	Ind.	Ill.	Mo.	Del.	Md.
March 10	844	559	898	832	190	677	1,811	1,446
March 17	792	597	824	854	239	710	1,911	1,568
March 24	809	690	825	770	183	706	1,870	1,626
March 31	783	680	888	815	185	748	1,940	1,562
April 7	822	705	823	864	235	784	1,853	1,585
April 14	862	676	835	965	183	735	2,094	1,395
April 21	762	706	717	852	177	784	1,979	1,540
April 28	730	644	860	835	196	740	1,908	1,598
May 5	833	741	859	809	207	779	2,048	1,459
May 12	877	711	824	893	163	762	2,013	1,503

Week ending:	Va.	W. Va.	N.C.	S.C.	Ga.	Fla.	Ala.	Miss.
March 10	1,458	597	1,553	233	4,441	281	1,670	1,125
March 17	1,468	660	1,628	286	4,486	277	1,674	1,119
March 24	1,455	644	1,630	351	4,700	311	1,827	1,158
March 31	1,462	619	1,577	336	4,825	280	1,892	1,178
April 7	1,516	572	1,631	339	4,827	304	1,844	1,149
April 14	1,544	568	1,654	379	4,977	273	1,873	1,101
April 21	1,549	524	1,606	307	5,056	288	1,854	1,222
April 28	1,316	534	1,693	313	4,907	264	1,908	1,218
May 5	1,394	507	1,660	299	5,119	257	1,849	1,135
May 12	1,361	585	1,707	273	5,122	248	1,816	1,220

Week ending:	Ark.	La.	Texas	Wash.	Oregon	Calif.	Total 22 areas 1956	Total 22 areas 1955
March 10	1,817	269	1,928	258	174	1,165	24,236	19,779
March 17	1,907	294	2,001	313	138	1,209	24,954	19,964
March 24	2,156	337	2,003	248	190	1,252	25,740	20,745
March 31	2,152	368	1,993	267	190	1,276	25,913	21,637
April 7	2,249	363	2,104	252	226	1,266	26,313	21,839
April 14	2,374	386	2,151	365	198	1,134	26,719	22,306
April 21	2,295	356	2,214	279	236	1,359	26,662	22,149
April 28	2,341	333	2,257	291	217	1,244	26,449	22,406
May 5	2,165	335	2,203	286	187	1,329	26,480	22,618
May 12	2,273	425	2,261	280	248	1,246	26,801	22,871

THE FEED MARKETS

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Demand — Supply — Trends — Prices

Quotations on feed ingredients shown in these and adjoining columns are wholesale prices, per ton, bagged, for prompt delivery, unless otherwise noted. They are the latest quotations available from Feedstuffs correspondents and are not necessarily those in effect on date of publication. The prices represent fair average trading values and do not necessarily represent extreme low or high levels at which individual sales might have occurred. A descriptive summary of supply and demand factors prevalent in the feed market appears on page 2.

A AND D FEEDING OIL

Chicago: Demand fair; supply plentiful; straight A feeding oil, with 10,000 units vitamin A per gram 7½@9¢ a million units of vitamin A, l.c.l., packed in 55-gal. drums, f.o.b. Chicago, drums included.

New York: Trend steady; price per lb. in 55-gal. drums (413-420 lb.): 300 ICU, 750 A 13½@16½¢, 1,500 A 15½@17¢, 2,250 A 17½@20¢, 3,000 A 19½@21¢; 600 ICU, 1,500 A 16@18¢, 2,250 A 18@19½¢, 3,000 A 20@21½¢; f.o.b. Massachusetts, New York or Pennsylvania.

Memphis: Demand fair; trend steady; supply ample; dehydrated, 17% protein, guaranteed 100,000 units vitamin A $46.75.

Denver: Demand fair; trend steady; supply ample; 2,250 A, 300 D 21¢ lb.

Minneapolis: 10,000 A 29¢ lb.; 300 D, 2,250 A 30¢ lb.; 300 D, 1,500 A 18¢ lb.; 300 D, 750 A 16¢ lb.

Boston: Demand seasonally improved; supply good; 600 D, 1,500 A 17¢ lb.; 300 D, 2,250 A 18¢; 300 D, 1,500 A 16¢; 300 D, 750 A 15¢.

Buffalo: Demand steady; supply adequate; 300 D, 750 A 17½¢ lb.; 300 D, 1,500 A 19½¢ lb.; 300 D, 2,250 A 22½¢ lb.; 300 D, 3,000 A 25½¢ lb.; 600 D, 4,000 A 29¢ lb.; straight vitamin A feeding oil 9½¢ per M.U., drum lots, drums included, basis Buffalo.

Seattle: Demand and trend steady; supply ample; 300 D, 2,250 A 22¢ lb.; 300 D, 1,500 A 19¢ lb.; 300 D, 750 A 17¢ lb.; all ex-warehouse, drums included.

ALFALFA MEAL

Philadelphia: Demand dull; supply fair; 17% dehydrated $59.

Denver: Demand slow; trend steady; supply ample; $40, June delivery, new crop, 100,000 A.

Chicago: Demand slow; supply adequate; 17% dehydrated, with 100,000 units vitamin A guaranteed $45@45.50.

Cincinnati: Demand fair; trend steady; supply adequate; 17% dehydrated, 100,000 vitamin A $51; 17% dehydrated, no A $42.75; 13% fine suncured $46.

Kansas City: Market is substantially weaker with a number of independent offerings coming on the scene at various grades but all generally at the same price level; straight grades of 17% dehydrated alfalfa meal with 100,000 units vitamin A guaranteed on arrival $38@39, sacked, Kansas City; also $38@39 for bulk pellets; blenders market for this week $42@47, sacked, Kansas City on 100,000 A guaranteed meal; suncured market quiet.

Minneapolis: Prices fell off sharply this week as crop prospects improved. Quotations: 17% dehydrated, 100,000 units of vitamin A guaranteed $44@47.75, granules and oil treated $46.50@46.75, bulk; 18% dehydrated, 125,000 units of vitamin A guaranteed $50.75, granules and oil treated $49.75, bulk.

St. Louis: Demand fair; trend lower; supply ample; dehydrated, 17%, 100,000 A $46.75 ton; suncured No. 1 fine ground, 13% $43 ton, f.o.b. St. Louis.

Boston: Demand slow; supply adequate; dehydrated 17 to 20% $59; suncured 13%, Kansas $48.25, Colorado $54.75.

Buffalo: Demand and supply fair; trend steady; $63, sacked, Boston.

Los Angeles: Demand limited; trend steady; supply plentiful; 15% suncured $42; 17% dehydrated $45.

Ft. Worth: Demand good; supply light; dehydrated, 17% protein, northern origin, 100,000 A $52@53, delivered Ft. Worth by rail; dehydrated 20%, maximum 20% fiber, 150,000 A $18, f.o.b. central Texas plants.

New Orleans: Demand good; supply light; 18% dehydrated, vitamin A guaranteed $62.74; 17% dehydrated, vitamin A guaranteed $57@59; non guaranteed $46@49; 15% $43@46.

Portland: Demand slow; supply ample; trend unchanged; suncured 15% $42.50, delivered; 15% California $45, f.o.b. California; dehydrated $50, f.o.b. California.

Seattle: Demand slack; trend steady; supply good; $47.50 ton, delivered carlots, 15% protein suncured; $62 ton, delivered, carlots, 136,000 A unit dehydrated.

ALFALFA PELLETS

New Orleans: Demand fair; trend steady; supply ample; 17% $60@61.

Denver: Demand slow; trend steady; supply ample; 100,000 A $42, June delivery, new crop.

ANIMAL FATS (STABILIZED)

Denver: Demand fair; trend steady to weaker; supply ample; prime tallow 7@7¼¢.

Chicago: Demand good; supply adequate; bleachable fancy tallow, tank truck or carlots 7¾¢ lb; yellow grease 6¾¢.

Ft. Worth: Demand good; supply adequate; prime tallow, tank cars 7½¢ lb.; drums 8½¢, f.o.b. north Texas packing plants.

St. Paul: Market steady and firm; demand good; bleachable fancy tallow 7¼¢ lb., f.o.b. producers' plants.

Los Angeles: Demand good; trend steady; supply ample; bleachable fancy tallow 8¢ lb.; yellow grease 5½@6¢ lb.

Louisville: Demand slow; trend firm; supply ample; yellow grease 7¼¢ lb.; white tallow 7¾¢ lb.

BARLEY FEED

Seattle: Demand and supply good; trend firm; whole barley $60 ton; ground barley $60 ton; rolled barley $61 ton; all ex-warehouse, sacked, l.c.l.

Philadelphia: Demand dull; supply fair; pulverized $51.50.

San Francisco: Demand fair; supply ample; rolled $60; ground $58.

Los Angeles: Demand fair; trend steady; supply ample; standard rolled $3.08; standard ground $3.04.

Portland: Demand good; supply ample; trend unchanged; rolled $63, ground $61.

New Orleans: Demand dull; trend firm; supply adequate; pulverized barley $59@61.50; steamed, crimped barley $72@74.25.

Ogden: Supply normal; rolled $48@53; whole barley $41@46.

Baltimore: Demand good; supply light; $51.50.

Milwaukee: Demand good; supply fair; needles $1.05@1.15; ground $23.

Boston: Demand quiet; supply short; $50.

Chicago: Demand good; supply light; $42.

BENTONITE (SODIUM)

Chicago: Demand very good; supply adequate; f.o.b. Wyoming and South Dakota points: granular, 30 mesh $15.50; fine granular, 80-100 mesh $12.75; powder, 200 mesh $12.50; f.o.b. Belle Fourche, S.D., minimum 30-ton carlot: 80 granular $12.50 net; 200 mesh fine $12.25 net.

BLOOD FLOUR

New Orleans: Demand fair; trend firm; supply ample; $72.50@77.50.

Louisville: Demand good; trend steady; supply fair; $87.50@92.50 ton.

BLOOD MEAL

Louisville: Demand fair; trend firm; supply ample; $89.50@92.50 ton.

Chicago: Demand fair; supply adequate; $115@120 ton, guaranteed 80% protein.

Cincinnati: Demand fair; trend steady; supply adequate; $120.

Seattle: Demand slow; trend easy; supply ample; $80 ton, f.o.b. local packing plants, l.c.l.

Portland: Demand good; trend higher; supply ample; $104.50.

New Orleans: Demand fair; trend steady to higher; supply ample; $72.50@77.50.

San Francisco: Demand slow; supply ample; screened $4.75 a unit of ammonia.

Los Angeles: Demand fair; trend steady; supply ample; $4.25 a unit of ammonia.

Ogden: Supply average; $105 ton in 100-lb. bags, f.o.b. Ogden.

BONE MEAL (STEAMED)

Ft. Worth: Demand fair; supply adequate; $35, sacked, f.o.b. Ft. Worth, local manufacture.

San Francisco: Demand good; supply ample; $82.50.

New Orleans: Demand good; trend firm; supply limited; $85@90.

Portland: Demand good; supply ample; trend unchanged; $90.

Seattle: Demand steady; trend firm; supply good; $85 ton, ex-warehouse, l.c.l.

Los Angeles: Demand fair; trend steady; supply ample; domestic $89.50.

St. Paul: Market firm at $80 ton in large lots.

St. Louis: Demand good; trend firm; supply adequate; $90@92 ton, sacked.

Omaha: Demand good; supply limited; $85.

Louisville: Demand slow; trend firm; supply ample; $72.50@75 ton.

Buffalo: Demand good; trend steady; supply ample; $80 ton, sacked.

Cincinnati: Demand fair; trend steady; supply adequate; $80 ton, sacked, f.o.b. Cincinnati.

Denver: Demand slow; trend steady; supply ample; $82.50, f.a.b. West Coast.

Boston: Demand and supply steady; $86.

Chicago: Demand fair; supply adequate; $75@87.50.

BREWERS DRIED GRAINS

Ft. Worth: Demand slow; supply moderate; 26% $49@50, prompt, delivered Ft. Worth.

Cincinnati: Demand fair; trend steady; supply adequate; $55@55.50.

Buffalo: Demand fair; trend steady; supply poor; $55, bulk, Boston.

Boston: Demand slow; supply good; 26% $55.50@56.50; Canadian 22% $51.50.

Milwaukee: Demand good; supply fair; $50@51, Milwaukee.

St. Louis: Demand fair; trend steady; supply ample; $39 ton, bulk; $44 ton, sacked.

Chicago: Demand good; supply scarce; 24% $48.50@49.

New Orleans: Demand fair to good; trend steady to firm; supply ample; $50@54 on 26%, prompt.

Philadelphia: Demand dull; supply light; $59.

Los Angeles: Demand fair; trend steady; supply ample; $53, f.o.b. Van Nuys.

Louisville: Demand good; trend steady; supply light; $49 ton.

BREWERS DRIED YEAST

San Francisco: Demand fair; supply good; 10¢ lb.

Portland: Demand good; supply ample; trend unchanged; 13¢.

Los Angeles: Demand fair; trend steady; supply ample; 10¢.

Omaha: Demand good; supply adequate; 11¢ lb.

Pittsburgh: Carlots 10¢ lb.; 5-ton lots 11¢; ton lots 11½¢.

New Orleans: Carlots 10¢ lb.; 5-ton lots 11¢; ton lots 11½¢.

Cincinnati: Carlots 10¢ lb.; 5-ton lots 11¢; ton lots 11½¢.

New York: Carlots 9½¢ lb.; 10-ton lots 10¢ lb.; 5-ton lots 10½¢ lb.; ton lots 11¢ lb., f.o.b. New Jersey.

Milwaukee: Demand good; supply limited; 10½@11½¢ lb. in carlots; 10¾@12½¢ lb., l.c.l.

St. Louis: Demand fair; supply adequate; 10¢ lb. in carlots; 10½¢ lb. in 5-ton lots; 11¢ lb. in ton lots; 11½@12¢ lb. in less than ton lots.

Louisville: Demand good; trend steady; supply light; 10@11¢ lb.

Denver: Demand fair; trend steady; supply ample; $11 cwt.

Boston: Demand and supply good; 11½¢.

Buffalo: Demand good; trend steady; supply limited; $10.65 cwt.

Chicago: Demand good; supply limited; 10@11½¢ lb. in carlots; 10¾@12½¢ l.c.l.

BUTTERMILK-CONDENSED

Louisville: Demand slow; trend steady; supply normal; $4.25 cwt.

New Orleans: Demand good; supply ample; trend steady; 100-lb. drums $4.75@5.35.

Philadelphia: Demand dull; supply fair; $3.50 in barrels; $4.25 in kegs.

Los Angeles: Demand fair; trend steady; supply ample; 100-lb. drums $5.50; large barrels $4.75.

Portland: Demand good; supply ample; trend unchanged; $4.75.

Ogden: Supply normal; $4.90, 100-lb. drum.

Boston: Demand poor; supply ample; 3½¢ lb.

Chicago: Demand and supply fair; $3.25 @3.50 cwt. in carlots.

CALCITE CRYSTALS AND FLOUR

(All prices net, including freight and tax)

New York: Crystals $12.48, flour $9.42.
Buffalo: Crystals $14.20, flour $10.20.
Toledo: Crystals $15.77, flour $11.77.
Boston: Crystals $14.62, flour $10.62.
Limecrest, N.J.: Crystals $9.50, flour $5.50.

CALCIUM CARBONATE

Cincinnati: Demand fair; trend steady; supply adequate; $8@9.

Los Angeles: Demand fair; trend steady; supply ample; meal and flour $10.53 ton, carloads; grits $13.03 ton, carloads.

Minneapolis: Plain $11; iodized (½ lb. KI per ton) $14.45; iodized manganese $15.90, in 100-lb. bags.

Chicago: Plain $8.90 ton in 100-lb. bags, delivered.

Seattle: Demand steady; supply ample; trend unchanged; $14 ton, ex-warehouse, truck lots.

CHARCOAL

San Francisco: Demand steady; supply ample; $59.50.

Boston: Demand slow; supply light; $95.

Chicago: Demand quiet; supply limited; poultry charcoal $102 ton in 50-lb. multiwalls.

New Orleans: Demand fair; trend steady; supply scarce; 40-lb. bags oak charcoal $2.40@2.45; 50-lb. bags poultry charcoal $2.50@2.55.

Los Angeles: Demand fair; trend steady; supply scarce; poultry charcoal, oak, 40-lb. bags $155.80 ton, delivered Los Angeles County area.

COCONUT MEAL

Los Angeles: Demand slow; trend steady; liberal offers; cake, ex-dock, spot $63, nominal.

San Francisco: Demand fair; supply ample; solvent $58, expeller $62.

Portland: Demand slow; supply ample; trend unchanged; $68.

Seattle: Demand slack; trend steady; supply sufficient; $68 ton, ex-dock, 30-day shipment from Philippines.

COD LIVER OIL (FORTIFIED)

New York: Trend steady; price per lb. in 55-gal. drums (413 to 420 lb.): 300 ICU, 750 A 14½@15½¢, 1,500 A 16½@19¢, 2,250 A 18½@21¢, 2,000 A 21½@23¢; 600 ICU, 1,500 A 15@19½¢, 2,250 A 20@22¢, 3,000 A 22@23½¢; f.o.b. Massachusetts, New York or Pennsylvania.

Boston: Demand seasonally improved; supply good; 600 D, 2,250 A 22¢ lb.; 300 D, 2,250 A 21¢; 300 D, 1,500 A 18½¢.

CONDENSED FISH SOLUBLES

New York: Demand good; trend steady; supply limited; 3½@3¾¢ lb., f.o.b. eastern shore.

Los Angeles: Demand fair; trend steady; supply ample; 4½¢.

New Orleans: Demand good; supply spotty; trend steady; 4¢ lb., f.o.b. New Orleans.

Boston: Demand active; supply fair; 3½@3¾¢ lb.

CORN GERM MEAL

St. Louis: Demand good; trend steady; supply adequate; $47 ton bulk, $52 ton in burlap sacks, St. Louis.

CORN GLUTEN FEED AND MEAL

(All quotations for all cities are sacked basis, bulk basis $5 less)

Minneapolis: Feed $55.08, meal 78.08. ...
Atlanta: Feed $64.49, meal $87.49.
Minneapolis: Feed $55.08, meal $78.08.
Boston: Feed $61.61, meal $84.61.
Chicago: Feed $51, meal $74.
Cleveland: Feed $58.31, meal $81.31.
Denver: Feed $60.37, meal $83.37.
Ft. Worth: Feed $58.93, meal $81.93.
Indianapolis: Feed $55.74, meal $78.74.
Kansas City: Feed $53, meal $74.
Louisville: Feed $55.39, meal $78.39.
New Orleans: Feed $60.27, meal $83.27.
New York: Feed $61.20, meal $84.20.
Norfolk: Feed $60.37, meal $83.37.
Philadelphia: Feed $60.78, meal $83.78.
Pittsburgh: Feed $58.93, meal $81.93.
St. Louis: Feed $51, meal $74.

CORN OIL MEAL

Cincinnati: Demand fair; trend steady; supply adequate; $59.

Louisville: Demand slow; trend firm; supply normal; $58.10, ton.

New Orleans: Demand good; supply adequate; trend stronger; $83.27@87.27.

COTTONSEED OIL MEAL

Ogden: Supply normal; 41% $68@73.

Ft. Worth: Demand fair; supply adequate; carlots, central and north Texas origin, 41% old process $60@61.50; solvent 41% low gossypol $59.50, delivered Ft. Worth, immediate shipment; pellets $2 additional.

Wichita: Demand slow; supply ample; 41% $61.50.

Cincinnati: Demand fair; trend steady; supply adequate; $63.50@64.

Boston: Demand improved; supply adequate; $71.25.

Denver: Demand slow; trend firmer; supply ample; 41% solvent $66.

Buffalo: Demand and supply fair; trend steady; $71, sacked, Boston.

Chicago: Demand slow; supply plentiful; hydraulic $65@65.50; solvent $64@64.50.

Portland: Demand slow; supply limited; trend unchanged; $62, f.o.b. Los Angeles.

New Orleans: Demand fair to good; trend firm; supply adequate; 41% old process $69@71.50.

Los Angeles: Demand and trend steady; supply moderate; $61@62.

Seattle: Demand fair; trend steady; supply good; $78 ton, delivered, carlots, 41% expeller process.

San Francisco: Demand good; supply ample; expeller $69.50; solvent $68.

Louisville: Demand slow; trend firm; supply ample; new process $60.75 ton; old process $61.75 ton.

Kansas City: Little change in the market with demand fair and offerings fairly adequate; $53@53.50, sacked, Memphis, for either solvent or old process.

Omaha: Demand fair; supply adequate; 41% solvent $69.

Atlanta: Demand fair; supply ample; trend steady; 41% $69, sacked.

Memphis: Demand moderate; trend upward; supply ample; prime 41% protein, old process $52.50, sacked; new process, 41% solvent $52, sacked.

D ACTIVATED ANIMAL STEROL, POWDERED

Cincinnati: Demand fair; trend steady; supply ample; 1,500 ICU 11@13¢; 3,000 ICU 18¢, warehouse.

New York: Trend steady; price per lb. in 50- and 100-lb. bags or 100-lb. drums: 1,500 ICU 8@12¢ bagged, 12@13¢ drums; 3,000 ICU 13@17¢ bagged, 17@18¢ drums; f.o.b. or delivered basis Pennsylvania, Delaware and New York.

Kansas City: Demand fair; trend steady; supply adequate; 10½@11¢ lb.

D ACTIVATED PLANT STEROL, POWDERED

Chicago: Demand good; supply adequate; 4,000,000 U.S.P. units per lb., 15¢ lb.; ton lots and less 17¢; 12,000,000 units per lb., 5 tons to a carload 23¢ lb.; ton lots and less 30¢ lb.

DEFLUORINATED PHOSPHATE

Tupelo, Miss.: $49.50.
Houston: 19% $69.50.
Wales, Tenn.: $62.10.
Coronet, Fla.: Minimum phosphorus 17%, minimum calcium 34%, maximum fluorine .17% $58 net ton, f.o.b. Coronet in 100-lb. multiwall bags, $56 in bulk; minimum phosphorus 14.5%, minimum calcium 34%, maximum fluorine 0.145% $50 net ton, f.o.b. Coronet, in 100-lb. multiwall bags.

DICALCIUM PHOSPHATE

Minneapolis: 18.5% phosphorus, 24% calcium granular or fine ground $88.54 ton, delivered; $3 ton less in bulk.

Trenton, Mich.: Minimum phosphorus 21%, maximum fluorine .01% guaranteed $94.50, f.o.b. Trenton, in 100-lb. multiwall bags; minimum phosphorus 18½%, maximum fluorine .01% guaranteed $83.35, f.o.b. Trenton in 100-lb. multiwall bags.

Adams, Mass.: Minimum phosphorus 18½%, minimum 25% calcium, maximum .01% fluorine guaranteed $79.55 ton, f.o.b. Adams, in 100-lb. multiwall bags. Freight equalized with nearest producing point, carload basis; bulk $3 ton less.

Columbia, Tenn.: Minimum phosphorus 18½%, minimum 25% calcium, maximum .01% fluorine guaranteed $79.55 ton, f.o.b. Columbia, in 100-lb. multiwall bags. Freight equalized with nearest producing point, carload basis; bulk $3 ton less.

Bonnie, Fla.: Demand improving; supply adequate; minimum phosphorus 18½% granular $79.55. Freight equalized with closest dicalcium phosphate producing point, carload basis.

East St. Louis: 18½% phosphorus $83.25, bagged, f.o.b. cars.

Chicago: Demand fair; supplies adequate; stock feed grade, 18.5% phosphorus, 20,000 lb. or more $83.25 per net ton in 100-lb. papers, basis Chicago Heights, Ill., or Nashville, Tenn., less than 20,000 lb. $83.25; 21% phosphorus, 20,000 lb. or more $94.50, basis Chicago Heights and Nashville, less than 20,000 lb. $104.50; freight equalized with St. Louis, Trenton, Mich., and Godwin, Tenn.; bulk boxcars or hoppers, $3 net ton less than bagged material.

Portland: Demand good; supply ample; $100.

Denver: Demand slow; trend steady; supply ample; $83.50, f.o.b. plant, St. Louis.

Cincinnati: 18% phosphorus $75@87.50.

DISTILLERS DRIED GRAINS

Boston: Demand slow; supply short; Canadian light $61; domestic dark $64.25.

Buffalo: Demand fair; trend higher; supply poor; $59, bulk, Boston.

New Orleans: Demand fair to dull; trend steady; supply adequate; $57.50@60.

Philadelphia: Demand dull; supply very light; $60, nominal.

Cincinnati: Demand fair; trend steady; supply very limited; $54.50@58.

San Francisco: Demand fair; supply ample; $57.50; solubles $50.

Louisville: Demand excellent; supply light; trend steady; light $54 ton, dark $55, solubles $71.50 ton.

New York: Demand good; trend steady; supply adequate; light $54, bulk, Boston; dark $56, bulk, Boston; solubles $78, sacked, Boston; market expected to remain the same for another month or so.

DRIED BEET PULP

New Orleans: Demand good; supply adequate; trend steady; $65.75@68.

Cincinnati: Demand fair; trend steady; supply limited; $63@63.50.

Atlanta: Demand slow; trend steady; supply ample; $48.30.

Chicago: Plain pulp $62.50, molasses pulp $60.85, in papers; 15% protein pulp $55.20.

Boston: Demand active; supply limited; domestic $60.50@63; Canadian $67.50; 15% protein pulp $67.50, papers.

Buffalo: Demand and supply poor; trend steady; $70, sacked, Boston.

Seattle: Demand fair; trend steady; supply limited; $55 ton, delivered, carlots.

Ft. Worth: Demand slow; supply scarce;

cariots, 50-lb. papers $66@67, delivered Ft. Worth, May shipment.

Los Angeles: Demand fair; trend steady; supply ample; $50.20, paper bags, new crop.

San Francisco: Demand good; supply fair; $52.35.

Ogden: Supply normal; $45@50 ton.

Milwaukee: Demand and supply fair; molasses $61.50; plain $62.50.

DRIED BUTTERMILK

Wichita: Demand slow; supply adequate; $8.25 cwt.

Louisville: Demand slow; trend steady; supply normal; 10@10½¢ lb.

Los Angeles: Demand fair; trend steady; supply ample; 11¢.

Ft. Worth: Demand very slow; supply light; local production $13 cwt., f.o.b. Ft. Worth.

Minneapolis: Market somewhat easier at $8.50@9.50 cwt.

New Orleans: Demand fair; trend steady; supply ample; 11@12¢ lb.

Ogden: Supply average; $8.65, 100-lb. bag.

Boston: Demand poor; supply short; 11½¢ lb., nominal.

Milwaukee: Demand and supply fair; $11.

Buffalo: Demand fair; trend steady; supply ample; $9.45 cwt.

Chicago: Demand fair; supply adequate; medium acid 9@9¾¢, sweet cream 10@10½¢ cwt. in cariots.

DRIED CITRUS PULP

Buffalo: Demand and supply fair; trend steady; $35, sacked, f.o.b. Florida points.

Boston: Demand light; supply good; $55.39.

San Francisco: Demand good; supply fair; meal $50.

Atlanta: Demand fair; supplies limited; trend steady; pulp $44, meal $41.50, sacked, immediate.

Los Angeles: Demand good; trend steady; supply limited; f.o.b. southern California producers' plants: orange $42 sacked, $37 bulk.

New Orleans: Demand light; supply ample; trend steady; $42@44.

DRIED SKIM MILK

Philadelphia: Demand dull; supply very light; $13, nominal.

Cincinnati: Demand fair; trend steady; supply adequate; 11¢.

Portland: Demand good; supply ample; trend unchanged; 13¢.

Los Angeles: Demand fair; trend steady; supply ample; $13.75.

San Francisco: Demand and supply fair; 13½¢ lb.

Minneapolis: Market steady at $11@12 cwt.

New Orleans: Demand good; supply ample; trend steady; $12.50@13 cwt.

Louisville: Demand fair; trend firm; supply ample; 11½@12¢ lb.

Chicago: Demand light; supply adequate; $11@11.50 cwt. in cariots.

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Milwaukee: Demand and supply fair; $11.50.

Buffalo: Demand just fair; supply ample; trend steady; $10.65 cwt.

Boston: Demand poor; supply plentiful; 12¢ lb.

DRIED WHEY

Chicago: Demand steady; supply adequate; $5.20@5.30 cwt. in cariots.

Boston: Demand poor; supply plentiful; 5¾¢ lb.

Buffalo: Demand fair; trend steady; supply adequate; $6 cwt., delivered.

Denver: Demand fair; trend steady; supply ample; $7 cwt., $6 carload lots.

Cincinnati: Demand fair; trend steady; supply adequate; $5.50 cwt.

Ogden: Supply normal; $6.90, 100-lb. bag.

New Orleans: Demand dull; trend steady; supply adequate; $6@6.90 cwt.

Ft. Worth: Demand fair; supply adequate; cariots, standard $6 cwt., sacked, delivered Ft. Worth or any Texas point or in ton lots, f.o.b. warehouse, Ft. Worth.

San Francisco: Demand steady; supply good; $6 cwt.

Philadelphia: Demand and supply fair; $6 cwt.

Los Angeles: Demand moderate; trend steady; supply ample; fortified $6.15; unfortified $6.

Portland: Demand good; supply ample; trend unchanged; $5.75.

Seattle: Demand steady; supply ample; trend unchanged; $7 cwt., ex-warehouse, l.c.l.

Louisville: Demand fair; trend steady; supply ample; $6 cwt.

Kansas City: Demand fair; straight grade $6 cwt., delivered or $5, f.o.b. plant, plus freight, whichever is lower; $6.25 cwt., partially delactosed.

Minneapolis: Market unchanged at $5@5.25 cwt.

FISH MEAL

San Francisco: Demand slow; supply ample; $2.30 a unit of protein.

Ogden: Supply normal; $2.20 a unit, f.o.b. Coast; 65% $171@173.

Seattle: Demand fair; trend steady; supply limited; Canadian herring meal $2.05 a unit protein, Seattle.

Portland: Demand good; supply limited; trend unchanged; $1.95, f.o.b. Vancouver; California $2.25, f.o.b. California.

Ft. Worth: Demand good; supply very limited for immediate delivery; Norwegian herring fullmeal 66% protein, min. 30% dried solubles added $165.50, f.o.b. Houston; 75% protein Canadian herring with 10% or more dried solubles added $166.62, delivered most Texas points, May shipment.

Atlanta: Demand good; supply limited; trend strong; 60% $149.

Minneapolis: Market unchanged at $1.85 a unit of protein, West Coast, for 70%; $154@157 ton for 60%.

New Orleans: Demand good; trend steady; supply limited for immediate; $140@142, f.o.b. New Orleans.

Los Angeles: Demand narrow; supply limited; trend steady; $2.27½@2.30 a unit of protein.

Louisville: Demand fair; trend firm; supply ample; $150 ton.

Cincinnati: Demand fair; trend steady; supply adequate; $155.

Boston: Demand good; supply fair; $133@135.

Milwaukee: Demand and supply fair; $163.

Denver: Demand fair; trend slightly stronger; supply ample; 74% herring $2 a unit, Seattle.

Buffalo: Demand good; trend steady; supply ample; 60% protein menhaden $148 ton, bulk; $151, sacked.

Chicago: Demand good; supply fair; menhaden fish meal, 60% protein, f.o.b. East Coast $133@139; 60% blended West Coast $137.50; Northwest herring-salmon blend $137.50; herring meal 73% protein $1.85@1.95 a unit of protein.

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HAY

Cincinnati: Demand slow; trend steady; supply adequate; No. 1 timothy (new) $21; first cutting No. 1 alfalfa $25; fancy No. 1 clover and timothy mixed $27; No. 1 red clover $22; bright wheat or oat straw $17@18.

Buffalo: Demand very weak; No. 2 timothy $16@18; No. 2 alfalfa $25@28; straw, strong $13@16.

St. Louis: Demand fair; trend steady; supply ample; No. 1 timothy $25@28 ton; No. 1 alfalfa $18@22 ton; No. 1 prairie $25@26 ton; straw $14@16 ton.

Boston: Demand and supply steady; No. 2 timothy $36.

Denver: Demand slow; trend steady; supply ample; alfalfa, baled $26; mountain, baled $38.

New York: Demand and supply good; trend steady; price per ton: No. 1 timothy $38@41, No. 2 timothy $32@36, No. 3 timothy $26@30.

Wichita: Demand slow; supply plentiful; prairie $18@25, alfalfa $20@34.

Louisville: Demand slightly better; supply heavy; all No. 1 hay, timothy, clover, alfalfa or mixed timothy and clover $30, No. 2 $28; lespedeza $20 and $18; straw $14@18.

Los Angeles: Demand fair; trend steady; supply ample; U.S. No. 1 $33@36; U.S. No. 2 leafy $30@32; U.S. No. 2, green $31@32; U.S. No. 2 $27@28.

Seattle: Demand slack; trend steady; supply sufficient; $42 ton, delivered, U.S. No. 2 green.

Philadelphia: Demand dull; supply fair; $28.

Ft. Worth: Demand poor for alfalfa, practically nil for others; supply sufficient; cariots, baled, No. 1 alfalfa $34@36, No. 2 $32@34; prairie, No. 2 $24@26; Johnson grass, No. 2 $22@24, delivered TCP.

Portland: Demand slow; supply ample; trend unchanged; $45.

Ogden: Supply normal; $1.25 bale; $24@30 ton in the barn.

HOMINY FEED

Seattle: Demand fair; trend steady; supply good; $68 ton, delivered, sacked.

Louisville: Demand fair; trend easy; supply ample; $59.20 ton.

Boston: Demand slow; supply adequate; $66.

Milwaukee: Demand good; supply poor; $67.50.

Buffalo: Demand and supply fair; $63, bulk, Boston.

Memphis: Demand nil; trend steady; supply ample; white $63, yellow $63.

Cincinnati: Demand fair; trend steady; supply adequate; $59.50@60.50.

Chicago: Demand good; supply tight; $57@57.50.

Kansas City: Nominally $56, sacked, Kansas City.

LINSEED OIL MEAL

Philadelphia: Demand and supply fair; $74.

Los Angeles: Demand and trend steady; light offers; $63.

Ft. Worth: Demand slow; supply adequate; cariots, 36% or better, May-June shipment $77.05, delivered Ft. Worth; pellets $2.50 premium.

Seattle: Demand slack; trend steady; supply good; $78 ton, delivered, cariots, 34% protein.

San Francisco: Demand and supply fair; $71.

Minneapolis: Market is firm at $54, bulk, Minneapolis, with export demand good and domestic demand fair; supplies limited; 22% flaxseed screenings oil feed, firm at $35, bulk, Minneapolis.

Omaha: Demand fair; supply good; 34% expeller $74.50, pellets $77; 36% solvent $68, pellets $70.50.

Portland: Demand slow; supply ample; trend unchanged; $63, f.o.b. Los Angeles.

Louisville: Demand slow; trend steady; supply normal; new process $71.50; old process $78.60.

Wichita: Demand fair; supply sufficient; 34% $72.

Cincinnati: Demand fair; trend steady; supply limited to adequate; new process $69@69.75; old process $75@76.

Boston: Demand slow; supply short; $75.17.

Milwaukee: Demand good; supply fair; old process $71.25; new process $64.25.

Denver: Demand fair; trend firm; supply ample; $67.

Chicago: Demand was somewhat better during the week ending May 16, with quite a bit going for export. Prices increased. Solvent linseed oil meal $65.50; expeller $72.

Kansas City: Some additional export trading activity has stiffened the market again this week; $53.50@54, bulk, Minneapolis.

MALT SPROUTS

Cincinnati: Demand fair; trend steady to easy; supply adequate; No. 1 $43.50@45.

St. Louis: Demand slow; trend steady; supply ample; No. 1 bulk $28 ton; No. 1 sacked $33 ton; No. 2 bulk $25 ton.

Milwaukee: Demand good; supply fair; oddweights $36@37; evenweights $39.

Chicago: Demand and supply fair; No. 1 $38.50.

MEAT SCRAPS

New York: Demand and supply good; trend steady; 50% $85, 55% $92.50, bulk; 50% $87.50, 55% $95, sacked.

Wichita: Demand good; supply insufficient; 50% $82.50, f.o.b. plant; 55%, no quotations, no offerings.

Buffalo: Demand and supply good; trend strong; 50% meat scraps $82.50 ton, bulk; $85, sacked.

Boston: Demand good; supply steady; $1.45 a protein unit; converted 50% $85.

Chicago: Demand fair; supply adequate; 50% protein $75@80; 55% $90.

Denver: Demand good; trend higher; supply tightening; 50% protein $77.50.

Ft. Worth: Demand fair; supply very light; meat and bone, 50% $78@82, f.o.b. or delivered Ft. Worth.

Kansas City: Offerings fair; demand good; 50% meat and bone scraps $82.50@85, sacked, Kansas City.

Portland: Demand good; trend higher; supply ample; $1.70.

San Francisco: Demand and supply fair; $1.80 a unit of protein.

Seattle: Demand steady; trend firm; supply good; $80 ton, ex-warehouse, truck lots.

Los Angeles: Demand good; trend steady; light offers; $1.75@1.85 a unit of protein.

Ogden: Supply normal; $87.80 ton in 100-lb. bags.

St. Louis: Demand fair; trend higher; supply ample; 50% $82.50@85.50 ton bulk.

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$87.50@90.50 ton in paper sacks, $86.50@89.50 ton in burlap sacks.

St. Paul: Market higher; demand steady; 50% meat and bone scraps $86.

Omaha: Demand good; supply limited; $85.

MILLET

St. Louis: Demand slow; trend steady; supply ample; recleaned Early Fortune $3.55 cwt., sacked; recleaned White Proso $3.70 cwt., sacked.

MILLFEED

Minneapolis: Market easier on bran and middlings and firm on heavier feeds. Interest in the former has fallen off, and lighter production of the latter is held responsible for relative firmness. Quotations: bran $48@48.50, standard midds. $49, flour midds. $54@55, red dog $56@56.50.

Kansas City: Steady market this week with consistent demand and offerings moderate to fair; bran $45.50@46 and shorts $48.50@49, sacked, Kansas City.

Omaha: Demand good; supply adequate; bran $47, shorts $51; standard midds., bulk $43.50.

Wichita: Demand fair, mostly mixed cars; supply limited; basis Kansas City, May 15: bran $45.75@46.25, shorts $49@49.50; prices on bran were unchanged to 25¢ ton lower, while shorts were unchanged, compared with the preceding week.

Denver: Demand off slightly; trend weaker; supply ample; bran $49, shorts $52, mill run $50.50.

Ft. Worth: Demand fair; trend easier; supply moderate; carlots, burlaps, prompt, wheat bran $31@32, gray shorts $55@56, delivered TCP; $2.50 lower on bran, $1.50 lower on shorts compared with previous week.

Chicago: Demand was fair during the week ending May 16; flour mills again were running full time. Prices slipped somewhat. Bran $50.50@51, standard midds $53@53.50, flour midds. $57@58, red dog $60@61.

St. Louis: Demand poor; trend steady; supply adequate; bran $50.25@50.75, shorts $53.25@53.75, St. Louis switching limits.

Cincinnati: Demand fair; trend steady; supply adequate; bran $57.50, middlings $59.50@60.

Louisville: Demand fair; trend steady; supply ample; bran $53.65, mixed feed $57.15, shorts $59.65, middlings $61.75.

Buffalo: Sales were light; users are buying only on a spot basis. Demand centered mostly in bran. Bran ended off $1.50, middlings were down $1 and heavy feeds were unchanged. Bran $52.50@53, standard midds. $55.50@56, flour midds. $62, red dog $62@63.

New York: Trend lower; price per ton, sacked: bran $61@61.50, standard midds. $64@64.50.

Boston: Demand spotty; supply light; bran $61, middlings $60.

Philadelphia: Demand spotty; supply ample; bran $63, standard midds. $65, red dog $69.

Memphis: Demand poor; trend lower; supply ample; wheat bran $51, gray shorts $55, standard midds. $53.50.

Seattle: Demand slow; trend easy; supply good; $45 ton, delivered common transit points.

Portland: Demand good; supply ample; trend unchanged; $44.

Ogden: Supply normal; to Utah and Idaho: red bran and mill run $44, middlings $49; to Denver: red bran and mill run $51, middlings $56; to California: red bran and mill run $51.50, middlings $56.50, f.o.b. San Francisco and Los Angeles.

San Francisco: Demand fair; supply ample; $53.50; red bran $59.

Los Angeles: Demand and trend steady; supply ample; mill run, Utah-Idaho billing, sacked $53.50@54.50; red bran, delivered CCP, sacked $58@59.

MINERAL FEED

Denver: Demand fair; trend steady; supply ample; 7.5% phenothiazine, 45-lb. block $4.50; 8.2% phosphorus, 50-lb. block $3.25; 7.5% phenothiazine, 8.2% phosphorus, 45-lb. block $4.25; 5% phosphorus, 50-lb. block $2.65.

Sioux City: 50-lb. mineral blocks, 8.2% phosphorus $92; 7.5% phenothiazine sheep mineral blocks $4 each.

Wichita: Demand good; supply insufficient; all-purpose with iodine, 50-lb. blocks $92.50, 100-lb. bags $87.50, f.o.b. plant.

Ogden: Supply normal; $106.50 ton, 50-lb. blocks; $96.50 ton, granular, 50-lb. bags.

San Francisco: Demand steady; supply good; all-purpose with iodine $70.

Ft. Worth: Demand fair; supply ample; all-purpose granules $87, block $92; mineral phosphorus 6% granules $104, block $108; cattle-sheep mineral, 7% phosphorus, granules $96, block $100; hog mineral, phosphorus 3½%, granules $86; phosphorus 2% $75 (all in 50-lb. paper bags).

Portland: Demand good; supply ample; trend unchanged; $42.

Seattle: Demand steady; supply ample; trend unchanged; high phosphorus mixtures $65 ton; competitive brands $44 ton.

MOLASSES

Ft. Worth: Demand fair; supply moderate; blackstrap 16¢ gal., f.o.b. Houston; delivered Ft. Worth trucks $34.16; seller's market price on date of shipment; maximum 16¢, May-June shipment.

San Francisco: Demand and supply good; $25 ton, f.o.b cars, Richmond, Cal.

Seattle: Demand steady; supply good; trend unchanged; $26 ton, f.o.b. Seattle, tank carlots.

Minneapolis: Market firm at higher levels; 14½@16¢ gal., f.o.b. New Orleans; West Coast offerings withdrawn.

Atlanta: Citrus molasses—demand good; supply limited; trend steady; $19 ton, f.o.b. Florida producing points.

Portland: Demand slow; supply ample; $26.

Memphis: Demand poor; trend steady; supply ample; blackstrap 14¢ gal., tank car, f.o.b. New Orleans.

Los Angeles: Demand and trend steady; supply ample; $25, f.o.b. tank cars; $25.25, f.o.b. tank trucks, both Los Angeles harbor.

Louisville: Demand fair; trend strong; supply normal; 14@14½¢ gal., tank car lots, Gulf ports.

New York: Trend steady; blackstrap 16¢ gal., tank cars, tank wagons, f.o.b. New York.

Milwaukee: Demand and supply fair; 14½¢ gal., New Orleans.

Buffalo: Demand good; trend steady; supply fair; 17¢ gal., f.o.b. Albany.

Boston: Demand and supply good; trend firmer; 16½¢ gal. in tank cars.

Denver: Demand fair; trend stronger; supply ample; 15¢ gal., f.o.b. New Orleans.

Cincinnati: Demand fair; trend steady; supply adequate; 13½¢ gal., New Orleans.

Kansas City: Trend stronger due to Cuban decision to cancel sales of high sugar molasses to U.S. sources; demand fair; for immediate 14@15¢ gal, New Orleans; May-July 14½@15¢ gal.

NIACIN

New York: Trend steady; $8 kilo, 50-kilo lots; $8.10 kilo, 10-kilo lots; $8.20 kilo, 5- and 2½-kilo lots; $8.30 kilo, 1-kilo lots; freight prepaid or paid to destination.

OAT PRODUCTS

Los Angeles: Demand quiet; trend steady; supply ample; white pulverized $64.

Seattle: Demand steady; trend firm; supply good; feed oats $67 ton, ground oats $68 ton, rolled oats $71 ton, all ex-warehouse, l.c.l.

Ft. Worth: Demand fair; light offerings; reground oat millfeed $29@31.50.

Portland: Demand good; supply ample; trend unchanged; rolled $71, ground $69, cleaned $72.

Philadelphia: Demand fair to dull; supplies fair to light; pulverized white oats $52.50; Canadian oat feed $28.50, domestic $27.50.

Minneapolis: Demand continues to hold up fairly well, with price changes on different products varied. Quotations: feeding oatmeal $82@83, standard pulverized $44@46.50, feeding oatmeal $66@73, reground oat feed $15@17, crimped oats $59.

St. Louis: Demand fair; trend steady; supply scarce; reground oat feed $19 in 100-lb. burlap bags; pulverized white oats $45 ton, choice $46.

Memphis: Demand poor; trend lower; supply limited; 3½% protein, reground oat feed $24.25.

Louisville: Demand slow; trend strong; supply normal; reground $23.25, rolled oats $86.75, feeding oatmeal $80.75, pulverized white oats $49.25, crimped white oats $67.75.

Cincinnati: Demand fair; trend steady; supply adequate; reground oats $23, pulverized white oats $48.50@49, rolled oats $88.

Boston: Demand steady; supply adequate; white pulverized, domestic $83; Canadian $50; ground mixed $41.50; reground oat feed $26.

Chicago: Demand slow; supply adequate; reground oat feed $16@17; fine ground feeding oatmeal $72@74; feeding rolled oats $80@82.

OYSTER SHELL

Boston: Demand and supply steady; in paper $22.96.

Cincinnati: Demand fair; trend steady; supply adequate; $21.75.

Seattle: Demand steady; supply good; trend unchanged; eastern $35 ton, western $28 ton, both ex-warehouse, l.c.l.

Portland: Demand good; supply ample; trend unchanged; western $30, eastern $36; granite grits $26.50, crystal grits $26.50.

Los Angeles: Demand and trend steady; supply ample local $18.25, eastern $26.

San Francisco: Demand fair; supply ample; local $15, eastern $26.

Louisville: Demand good; trend steady; supply normal; in 80-lb. bags $21.34; in 50-lb. bags $21.59; in 25-lb. bags $21.84.

PEANUT OIL MEAL

Milwaukee: Demand and supply fair; 26% $26.

Atlanta: Demand slow; supply limited; trend steady; 45% $63.

PEAT MOSS

Boston: Demand and supply steady; $3 @3.60 bale.

New York: Demand and supply good; trend steady; Canadian, 7 cu. ft. bale, veneer wrapped $3.25, freight prepaid; German 7½ cu. ft. bale $2.92,, at dock, New York.

Chicago: Demand good; supply limited; $3.65@3.75, standard 7½ cu. ft. bale.

San Francisco: Demand fair; supply ample; $3.35 bale.

Philadelphia: Demand good; supply light; $3, f.o.b. pier.

Portland: Demand good; supply ample; trend unchanged; $3.20.

Los Angeles: Demand moderate; trend steady; supply ample; Canadian, 6.1 cu. ft. bales $3.45 in 300-bale lots, delivered California main line points.

POTASSIUM IODIDE, U.S.P.

New York: Trend steady; granular or crystals $1.80½ lb. in 250-lb. drums, $1.82½ lb. in 100-lb. drums, $1.95 lb. in 25-lb. drums; 90% KI in calcium stearate or carbonate mixtures, $1.72@1.81 lb. in 250-lb. drums or 200-lb. lots, $1.74@1.83 lb. in 100-lb. drums; $1.86 lb. in 25-lb. drums; f.o.b. New York, New Jersey or Pennsylvania; freight allowed to destination on 100-lb. drums or larger packings.

St. Louis: Demand fair; trend firm; supply ample; 100% pure potassium iodide, U.S.P., 250-lb. average in drums $1.90, 100-lb. lots in fiber drums $1.92; potassium iodide calcium stearate mixture, 225 lb. in leverpak drums $1.81, 100-lb. lots in fiber drums $1.85.

RIBOFLAVIN

New York: Trend firm; feed grade (in feed supplements): 4½¢ gram in 3.63 to 16 gm./lb. mixtures, freight prepaid or paid to destination.

RICE BY-PRODUCTS

Ft. Worth: Demand fair; supply very scarce; carlots, rice bran $40@42, prompt shipment, f.o.b. south Texas rice mills; hulls $3@4, f.o.b. mills.

Atlanta: Demand slow; supply limited; trend strong; bran $52, nominal.

San Francisco: Demand good; supply fair; bran $54, polish $61.

Los Angeles: Demand fair; trend steady; supply ample; bran $55.61.

SCREENINGS

Cincinnati: Demand fair; trend steady; supply adequate; Canadian $23; barley $16 @22, both bulk, delivered.

Minneapolis: The market remains dull, with prices about unchanged. Quotations: country run $18@22, lights $4@14, mediums $14@22, heavies $22@32; Canadian $11, bulk, Duluth; Canadian ground $21, sacked, Duluth; flax screenings $18.

Chicago: Demand moderate; supply plentiful; ground grain screenings $26; Canadian, bulk $17.

Buffalo: Demand good; trend steady to higher; supply fair; ground, sacked $26, New York, L&R; unground, bulk $19.50, New York.

SORGHUMS

Cincinnati: Demand fair; trend steady; supply adequate; $2.95.

Ft. Worth: Demand slow; supply sufficient; carlots, bulk, No. 2 yellow $2.42@2.47, delivered TCP.

Los Angeles: Demand moderate; trend steady; supply ample; No. 2 milo, delivered CCP, prompt $2.92½ cwt.

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Des Moines: $22.50.
Philadelphia: $21.56@22.15.
Minneapolis: $23.15@23.85.
Buffalo: $22.50@23.10.
Atlanta: $18@18.70.
Memphis: $19.40@19.95.

SUNFLOWER SEED

St. Louis: Demand fair; trend steady; supply ample; large black $17 cwt., large gray $16.50 cwt., medium black $14.50 cwt., medium gray $14 cwt., small black and gray $10.50 cwt.

SOYBEAN OIL MEAL

Omaha: Demand fair; supply adequate; 44% solvent $75; 41% expeller $78.50.

Atlanta: Demand good; supply ample; trend steady; 44% $79.25, sacked.

Minneapolis: Prices are up about $3 ton this week, with demand good. An influence also was higher bean prices and lower oil

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Flax screenings, fine—20 to 40 lbs.

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Wheaty-bucks (black bux & cracked wheat)

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Salvage wheat (fireburnt)
Cracked chick wheat
Wheaty barley

WILD OATS
Mixed feed oats
Mixed grain (mostly oats)

GROUND SCREENINGS
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Other ground screenings

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markets. Quotations: $58@59, bulk, Decatur.

Portland: Demand good; trend higher; supply ample; May $57.50.

Philadelphia: Demand spotty; supply ample; $60, bulk, Decatur.

Louisville: Demand dull; trend strong; supply normal; $73.10, sacked.

Seattle: Demand steady; trend firm; supply ample; $91 ton, delivered, sacked, carlots.

New Orleans: Demand good; trend steady to higher; supply sufficient; 49% $78@80.50.

Memphis: Demand fair; trend steady; supply ample; prime 44% solvent $64, sacked, f.o.b. Memphis.

Los Angeles: Demand steady for nearby needs; trend steady; supply ample; $88.25@89.25, delivered CCP.

San Francisco: Demand fair; supply ample; $88.25.

Denver: Demand fair; trend stronger; supply ample; $82.

Ft. Worth: Demand good; supply sufficient; carlots, 44% $76.18@84.92, depending on origin; truck lots $71@72.50, delivered Ft. Worth.

Ogden: Supply normal; $85@90.

Milwaukee: Demand good; supply fair; $60.50, bulk, Decatur.

Boston: Demand slow; supply good; $60, Decatur point.

Cincinnati: Demand fair; trend steady; supply adequate; $60@62.50, bulk, Decatur.

Wichita: Demand slow; supply sufficient; 44% $76, f.o.b. Wichita.

Chicago: Prices rose somewhat during the week ending May 16. Demand was only fair. Supplies were adequate for needs of buyers. Quotations: 44% protein soybean oil meal $71@71.50.

Decatur: Demand fair; supply adequate; 44% bulk, unrestricted $61@61.50.

Kansas City: Market is stronger and firm with demand fairly good and offerings about adequate; for Kansas City and West $59.50@60, bulk, Decatur; unrestricted $61@61.50, bulk, Decatur.

TANKAGE

Kansas City: Demand good; market steady; 60% digester $80@83, sacked, Kansas City.

Louisville: Demand fair; trend steady; supply normal; $75@80 ton, sacked.

New Orleans: Demand fair; trend steady to higher; supply adequate; 60% protein $85.50@90.

Ft. Worth: Demand good; supply adequate; 60% digester $77@80, f.o.b. Ft. Worth.

Omaha: Demand good; supply limited; $80.

St. Paul: Market stronger; demand steady; 60% digester $83.

Los Angeles: Demand improving; trend steady; supply ample; $1.55 a unit of protein.

Wichita: Demand good; supply insufficient; 60% $82.50, f.o.b. plant.

Chicago: Demand fair; supply adequate; 60% protein $75@80.

WHEAT GERM MEAL

Buffalo: Demand fair; trend higher; supply poor; commercial grade $70, sacked, f.o.b. Buffalo.

Chicago: Market sharply stronger at $82, with offerings reduced.

New Orleans: Demand fair; trend steady; supply limited; $76@80.

LIVESTOCK

(Continued from page 1)

heavy fed cattle, large throughout the fall and winter, have turned downward, USDA noted. The reduction is partly seasonal, but with fewer cattle reported on feed April 1 and fewer sows farrowing spring pigs, the over-all level of livestock marketings will be lower than in past months.

Cattle on Feed

As reported previously, the number of cattle on feed in 14 states on April 1 was about 8% less than a year earlier. Most of the reduction was in cattle of lighter weights, and unless a great many young stock are put on feed soon, the supply of fed cattle for slaughter in late summer and early fall could be considerably below the large supplies of last year. USDA said prices of fed cattle may continue gradually upward, regaining last year's level sometime in late summer or fall. Prices of grass cattle may be slower to reach prices of last year.

USDA said it is probable that many cattle will be moved into feedlots this summer as feeder cattle prices decline seasonably and fed cattle prices strengthen. But even if fed cattle numbers stay up, total weight of fed beef will be down because slaughter weights will be lighter.

All of the increase in commercial slaughter of cattle in the first part of this year has been in steers and heifers. Cow slaughter was down from a year earlier. This apparently will be a year when inventories of young slaughter stock will be brought back in line with numbers of breeding stock. Any appreciable change in breeding stock numbers is less likely.

In general, USDA said, it appears that while numbers of young stock will readjust quickly, the over-all cattle cycle, though in a position where it could drop a bit, cannot definitely be said to be yet on a downtrend. (An article analyzing the cattle cycle outlook will appear in a later issue of Feedstuffs.)

Hog Production

Meanwhile, USDA also noted the downtrend in hog production. As reported previously, spring farrowings are being reduced by somewhat more than the 2% planned earlier. Summer farrowings in nine Corn Belt states are expected to be down 8%. And, with a further response to the past hog price situation, the fall pig crop is expected to be a little smaller than in 1955.

Farmers' plans as to production and storage of corn will be another factor in fall farrowings. The "free" supply of corn may be smaller, tending to limit number of hogs raised.

Prices of hogs, of course, will respond to the supply reduction. USDA says prices late this year will be up from a year earlier, and if both 1956 pig crops are cut back, prices of hogs in the first half of 1957 will be higher than this year. The hog-corn ratio should get back to around average, USDA said.

In another report, the government pointed out that red meat production in 1955 reached an all-time peak of 26.9 billion pounds, with beef production at a record high of 13.6 billion pounds. Pork production was up 11% from 1954. Total number of cattle slaughtered in 1955 was 3% above 1954, and the hog slaughter was up 13%.

In the first quarter of 1956, meat production was up 11% from 1955. However, by October-December, it may be around 2% below the same period of 1955. The total 1956 output is forecast at 3% above 1955.

POULTRY EXPORTS

(Continued from page 7)

made available to finance the demonstration efforts and other promotion of poultry and turkey products in these foreign markets.

Now, the latest enlistee in the campaign is Dr. Clifford D. Carpenter, president of the Institute of American Poultry Industries.

Trade Fairs to Help

Before the collective organizational activity gets under way through the initiative of Mr. Turner and Mr. Huntington, USDA is sending Clifton C. Warren, an old line poultry expert for the department, to Barcelona, Spain, this week where there will be a food show in which USDA will set up a demonstration booth to show the Spanish trade how and why U.S. chickens and turkeys are prepared and cooked. The trade pitch will be a showing of where the profit is to the retail interests of those countries in using U.S. poultry.

According to USDA officials, Mr. Huntington will be the over-all master of ceremonies for the visitors to the Barcelona Trade Fair. He will have, following the formal sessions, a hospitality room in which will be served by the local chef according to the Huntington formula U.S. poultry fryers and turkeys for their judgment and criticism.

The next stop in this trade fair tour of western Europe will be in Rome, where a big U.S. type of supermarket display is expected to be seen by all the poultry buyers of Europe.

These two official appearances of a U.S. display precede the arrangements wherein the poultry and turkey industries will cooperate through the use of foreign currencies obtained through P.L. 480. But these two shows will fix the pattern which the combined groups plan to make a permanent fixture in western European promotion of these U.S. products.

Determining Possibilities

As these preliminaries go on, the industry group attention is aimed at a determination of the possibilities of selling U.S. poultry and turkey products in western Europe. The groups want to know if the retailers are interested and if consumers will buy U.S. products.

U.S. efforts to export poultry products to Western Germany have met with stolid frozen ideas from the German import trade which will only accept fowl at a price competitive with low country fowl. Consequently, it is now seen necessary that a strong promotional presentation through trade fairs at first and through the joint venture of the associated trade groups and the USDA be made to German retail and wholesale dealers to demonstrate the better values of U.S. poultry fryers and turkeys.

According to USDA officials, the German import trade has a price consciousness on the basis of "soup fowls," a product with which the U.S. cannot compete with Denmark and the other low countries.

This summer, after the basic trade fair deals have been covered, it is learned that the persistent and persuasive Mr. Turner and the stalwart of the poultry industry, Mr. Huntington, will carry the gospel of U.S. poultry products into Germany.

Although there have been difficulties, and the capable Turner-Huntington-Carpenter team faces an up-hill battle, the idea of selling U.S. poultry to Western Germany has not been a flop.

Without any promotion and starting from scratch, the U.S. has been able to sell nearly 150,000 lb. of poultry products—not the mark of a top salesman, but a good order book for the first trip around the territory, it must be said.

CWT. TRADE

(Continued from page 1)

will meet in closed session with representatives of ingredients supply industries to pursue the committee's long range objectives of improving trading rules," Mr. Ellis said. "These meetings and subcommittee meetings will occupy the attention of the group during the morning sessions," he concluded.

To date, many organizations have gone on record favoring a change in the method of trading. Other organizations have expressed favor for initiating a government study to ascertain what obstacles might be encountered.

Favor Change

Among the organizations favoring immediate change are the AFMA, American Farm Bureau Federation, National Grange, Central Retail Feed Assn., Eastern Federation of Feed Merchants, Kentucky Grain & Feed Assn., Georgia Feed Assn., New England Feedmen, American Seed Trade Assn., Crop Science Society of America (a section of the American Society of Agronomy) and others.

Among the organizations recommending a study of the subject are the Grain & Feed Dealers National Assn., National Grain Trade Council, Soybean Growers Assn., Feed & Forage Research & Marketing Advisory Committee to USDA, Grain Research & Marketing Advisory Committee to USDA, National Soybean Processors Assn., Corn Industries Research Foundation, Oregon Wheat Commission, Midwest Feed Manufacturers Assn., New Mexico Grain & Feed Dealers Assn., and others.

Federal studies are generally regarded as time-consuming. However, government appraisal indicated research in this area can be completed in a nominal time period. AFMA has worked closely with the several USDA sections concerned and is advised the government is laying the groundwork for the early activation of the recommended study.

AFMA PROGRAM

(Continued from page 1)

other industries will discuss such subjects as research behind feed sales, selecting and training salesmen, dealer problems and solutions, problems in selling consumers and an analysis of how farmers accept new ideas.

Other speakers will deal with AFMA services, Food and Drug Administration work, farm legislation and other subjects.

Preceding the official convention sessions May 24-25 will be meetings on May 23 of several AFMA units, including the board of directors, Nutrition Council, traffic committee, purchasing agents committee, and feed control relations committee. An open forum on feed control problems will be held the evening of Wednesday, May 23.

A story on the purchasing agents committee activities, including its campaign for grain trading in hundredweights, appears on page 126.

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Delmarva Egg Settings Continue to Set Records

SALISBURY, MD.—Egg settings in the Delmarva area still continue to set new records each week. For the week ending May 12 the hatcheries in the area reported settings at 4,625,000 which topped the previous week by 1% and was 16% above the same week of 1955 and the highest of record.

According to the Delaware-Maryland Crop Reporting Service, broiler chick placements in the area at 3,659,000 for the week were slightly below a week earlier but 12% above the level of a year ago. A 3% increase in local hatchings was offset by a 13% decrease in inshipments to account for the small decrease in placements.

Chick placements in Delaware totaled 2,013,000 or 2% below the previous week. Egg settings at 2,285,000 were up 1%. In Maryland, chick placements totaled 1,503,000—3% above the previous week and egg settings at 2,417,000 were up slightly.

The average price for broilers in the Delmarva area dropped slightly in the week ending May 12. Prices paid averaged 20.98¢ compared to 21.16¢ the week before.

Delmarva growers marketed 3,183,000 broilers in the week, which was 1% above the previous week but 2% below the corresponding week last year.

Broiler growers had a less favorable meat-feed ratio in the week ending May 12. A pound of broiler meat would buy 4.3 lb. of feed compared to 4.4 a week earlier. Feed rose from $96.90 ton to $98.68.

Nationwide, chick placements in 22 reporting states totaled 26,801,000 for the week. This was 1% above the previous week and was 19% more than in the same week a year ago.

Egg settings in 22 states totaled 38,247,000. This was 2% above the previous week and 25% more than during the same week a year ago.

MARKETS

(Continued from page 2)

ery report shows output of Minnesota hatcheries up 4% from last year in April, but the number of eggs in incubators was up 11% on May 1 from a year earlier.

Good demand for hog feeds, attributed partly to special promotions and to the better pork prices, helped build tonnage, and baby pig feed also is moving in good volume. Dairy feed buying has fallen off, but turkey and broiler feeds are moving well.

Better weather in the area seemed to stimulate farmers' interest in feeding operations, although corn planting interfered in some areas with feed buying.

Southwest

Some slackening in the demand for formula feed was noted in the Southwest this week. The degree of letup varied, with some mills indicating a rather light volume of orders while others showed a moderate decline. All attributed the situation to the high prices of commodities and ingredients and a consumer resistance at the retail level. Over the past two weeks a good sales momentum had been built up, and now that most sales outlets are well-stocked new orders are harder to locate.

Particularly noticeable was a decline in carlot shipments. Some mills indicated their production pace was aided somewhat by a fairly good dock business. The industry was averaging five to six days during the first half of May, and this week's pace probably will drop to a bare five. Some scattered overtime still is reported.

Prices will hold steady in most instances, but vegetable protein costs advanced $2@3 ton this week. While animal proteins were unchanged up to this point the market was weaker, and a decline in tankage and meatscraps might offset some of the high costs of vegetable proteins. Grains held firm while millfeed showed easier tendencies.

Demand remained fairly good for poultry feed, particularly for commercial operations. Dairy feed demand slackened somewhat and hog feed demand was fair to good.

"Now I see why Ace was willing and anxious to take over several committees."

Central States

Feed business in the central states held to a fairly steady level during the week ending May 16.

The order backlog of most feed firms was indicated at from one to three days, and most mills were operating five days a week. In some instances six days were reported.

Broiler and poultry feeds continue good, and turkey feeds picked up strongly in the past week. Hog feeds were generally better, due to the increase in the prices of hogs.

Most mills were optimistic about the general tone of business, and it was felt several weeks of good feed business were ahead.

Northeast

Consumers backed away from higher feed prices, and the resultant letdown in sales and shipments caused feed manufacturers to cut their running time rather sharply.

The continued cold, wet weather, however, has held up demand for dairy feeds beyond the normal seasonal pattern. Usually at this time of the year dairy feed prices weaken, but so far they have held up and supplies of some are scarce.

Egg mashes led in tonnage volume, followed by broiler feeds and chicken and turkey growing feeds. Broiler prices held steady, and offerings appeared to be well absorbed. Egg prices, however, were off, with receipts a little more than the market could sustain.

Running time of formula feed manufacturers slipped to 40 hours last week, a 6 to 8 hour drop from the previous week.

Mountain States

Conversion on cattle and broilers has been hurt by the rise in feed prices which have more than overcome a stronger market for finished products. Although poultry and turkey feeding is at a higher rate than last year, cattle feeding has fallen off considerably.

The early hatch of turkeys is above last year, but the later hatches are expected to be even greater compared to a year ago.

Rising feed prices and the coming of grass have slowed cattle feed sales to a walk. Drouth conditions in some of the area have caused farmers to reduce the size of their herds.

Southeast

There has been little change in the feed business this week, with dealers and some mixers complaining about lack of demand at higher prices while others say that business is fair.

Poultry feed manufacturers in general report that business seems to get a little better each week. This is understandable since baby chick placements continue high and birds are at the heavy feed consuming stage. Some ingredient markets are in tight supply, and demand is hard to satisfy. Fish meal is in between seasons, and the squeeze for tail-end supplies has pushed prices up considerably.

Weather has not been good for fishing, and this situation will not improve for awhile. Citrus pulp producers have either withdrawn from the market or advanced prices due to a cut in the estimated fruit production this season of 2 million boxes. This was brought about by the discovery of a fruit fly from the Mediterranean area which caused total destruction of fruit in some producing areas.

Local corn remains tight, with most all available supplies going to the shelled corn trades. Snapped

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corn has been priced out of the market for all practical purposes. Local feeders continue to substitute cheaper materials wherever possible. Most reports indicate unchanged feed conditions during the balance of the month, with a relatively steady situation prevailing.

Pacific Northwest

The formula feed trade was quiet during the week, with retailers doing a heavy business in seeds and garden supplies and fertilizers, and the trade as a whole watching the ingredient markets for signs of future trends.

Pastures continue excellent, being much earlier and more lush than normal, and the market for hay continues dormant. Demand for hay by feeders in eastern Washington is steady, but the big market for hay in the state is to western Washington dairymen, and they are completely out of the market and utilizing their pastures.

Millfeed looks a bit easier, with California demand rather slack, and this commodity dropped about $1 ton during the week. The proteins looked stronger all the way down the line, based on the strong soybean meal market, and meatscrap was up about 10¢ per unit of protein from the previous week.

Coarse grain markets continue firm, based on good demand, and it is too early as yet to predict the size and quality of 1956 crops. The carryover of barley and oats is sufficient to take care of all current needs in spite of rather heavy consumption during the past several months. Feed men are apprehensive about turkey prices this fall, but the main interest at the moment is in feeding the birds out, and not in worrying about prices.

Ohio Valley

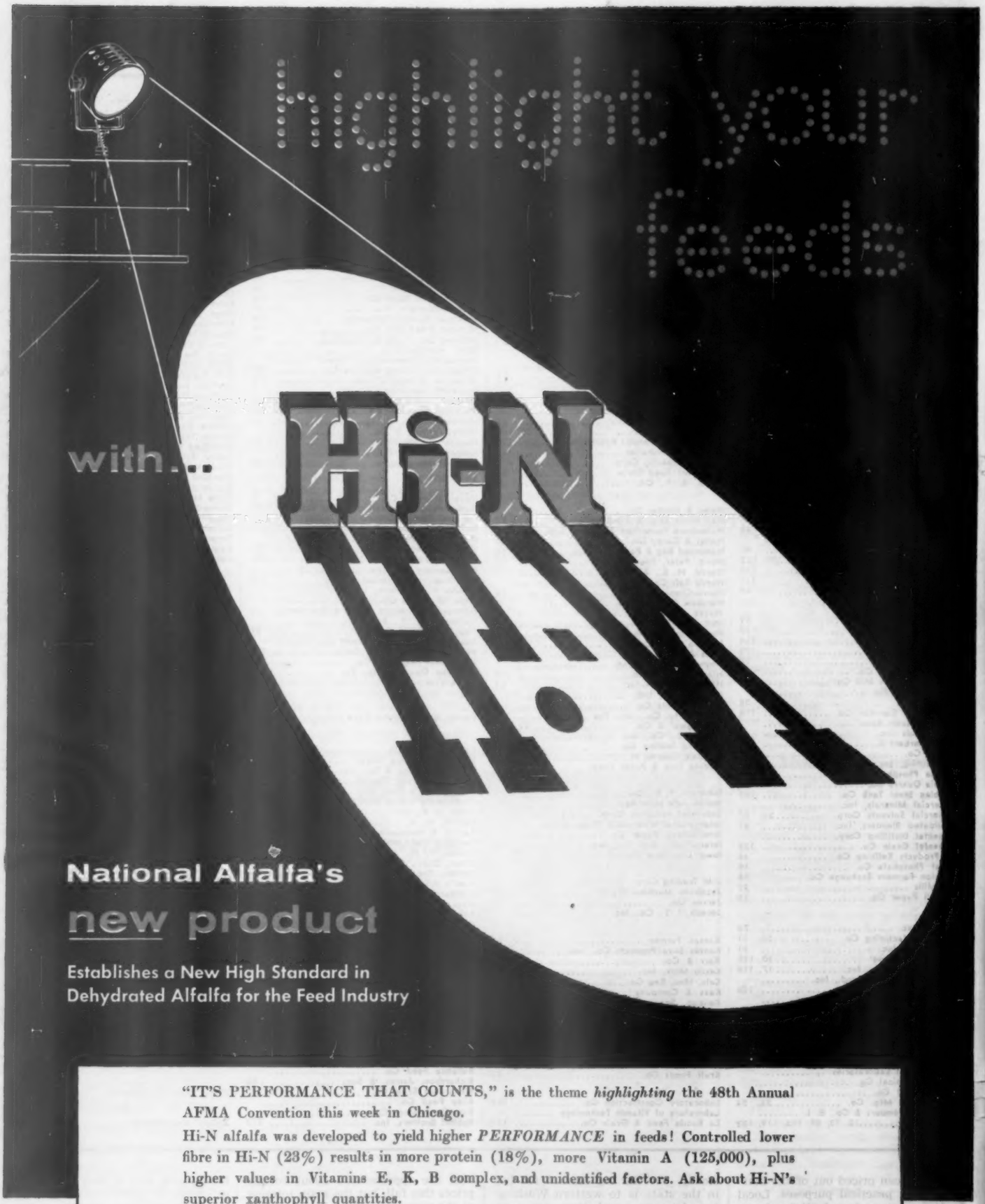
The easing off of formula feed sales was accelerated this week as buyers showed increasing resistance to the prevailing prices and apparently are substituting such farm crops as are available. The ample pasturage now available is, of course, a factor in this swing away from mixed feeds.

Manufacturers also were confronted this week with a further tightening of supplies of a number of ingredients, although, in view of the declining formula feed demand, the ingredient situation has not become too serious. But it does increase the problems of millers attempting to maintain balanced operations in a period of increasing uncertainties, both with respect to sales and ingredient purchases.

Because of the large numbers of baby chicks and turkey poults placed on valley farms this spring, sales of starter mashes and turkey and broiler feeds held up reasonably well this week, but the movement of other feeds declined considerably. Manufacturers see no signs of a reversal of this situation unless a price downtrend develops.

As a result of the declining sales, most area manufacturers reduced mill operations considerably this week, with some mills now finding two-shift schedules sufficient to keep production in balance with orders.

feeders in eastern Washington is | during the past several months. Feed | in



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